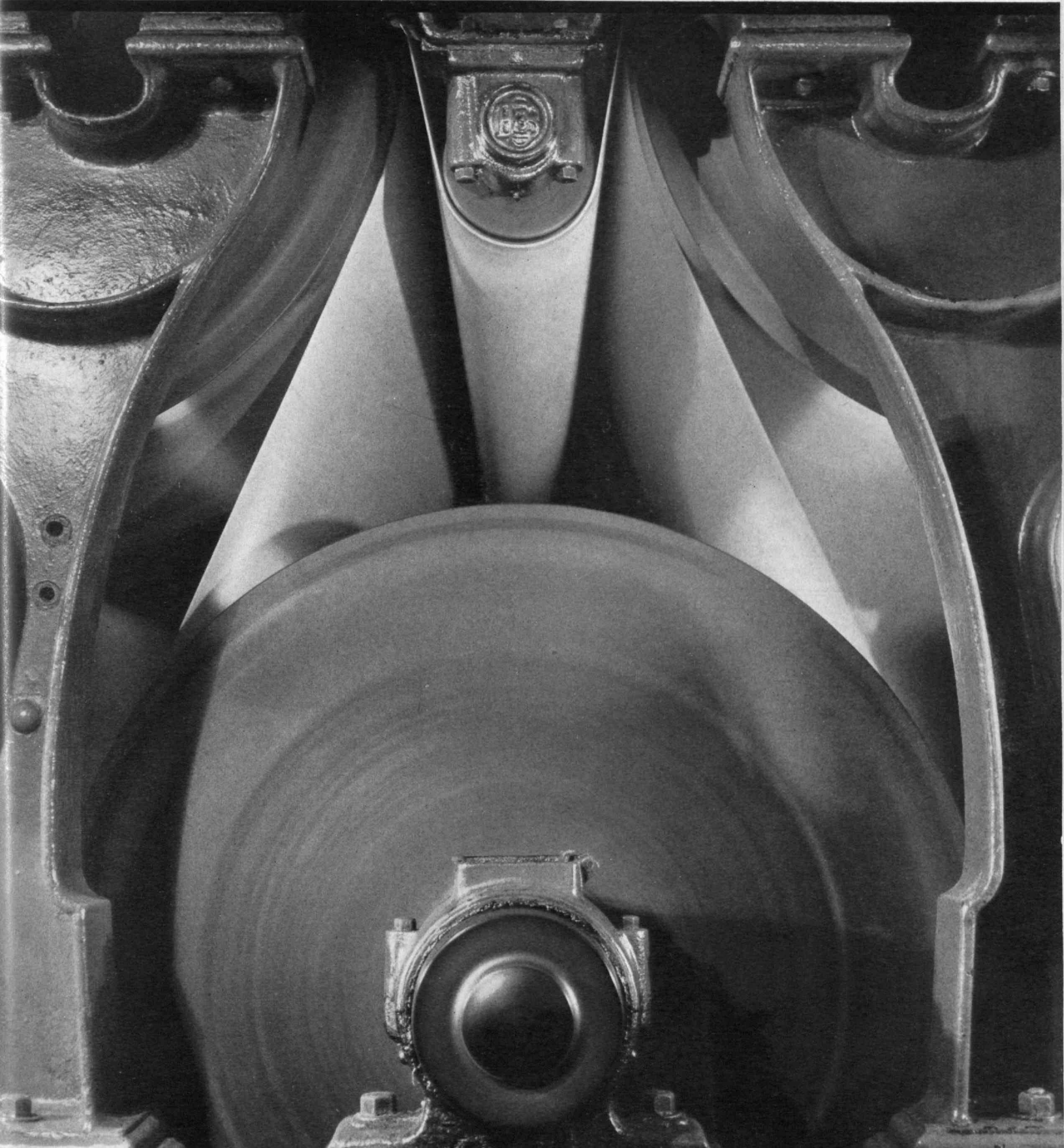


July 1935

TECHNOLOGY REVIEW


Title Reg. in U. S. Pat. Office



technology review

Published by MIT

This PDF is for your personal, non-commercial use only.
Distribution and use of this material are governed by copyright law.
For non-personal use, or to order multiple copies please email
permissions@technologyreview.com.



CLEAN WHITE CIGARETTE
PAPER FOR CHESTERFIELDS..

“poured”
like milk
and just
as pure..

To make

Chesterfield cigarette paper,
the linen pulp of the flax plant is washed
over and over again in water as pure as a
mountain stream.

So thin is this crisp white paper that an
18-inch reel contains enough for 55,000
Chesterfields—actually over 2 miles of paper

*Chesterfield paper must be pure
Chesterfield paper must burn right
It must have no taste or odor*

Liquid paper in
“beating” machines
of the Champagne
Paper Co.



—the cigarette that's Milder
—the cigarette that Tastes Better

© 1935, LIGGETT & MYERS TOBACCO CO.

THE TABULAR VIEW

THIS issue brings to a close Volume 37 of The Review, and the first issue of Volume 38, that dated October, will be published on September 27. ¶ Within the experience of the Editors, no volume of The Review has been so pleasant to edit as the one now closing. The satisfactions which have accompanied its publication have arisen largely from the growing responsiveness of our readers. This has been demonstrated in a variety of ways — by letters of comment (many of which have been published) and by wide quotation throughout the country. During the next volume the Editors desire and solicit still more comment from our readers. We wish particularly to widen the scope of our Mail Returns department, not only by way of helping the Editors to determine reader reaction, but by way of effecting a stimulating exchange of ideas among the readers themselves. ¶ A. W. K. BILLINGS, JR., '26, who contributed the article on the new profession of industrial design (page 367), is a consultant in industrial design associated with Arthur D. Little, Inc., as well as a practicing architect. ¶ President KARL T. COMPTON, whose address to the graduating class at M. I. T. is presented on page 370, made headlines at Brown University last month by a commencement address in which he criticized the pending Public Utility Bill as unscientific.

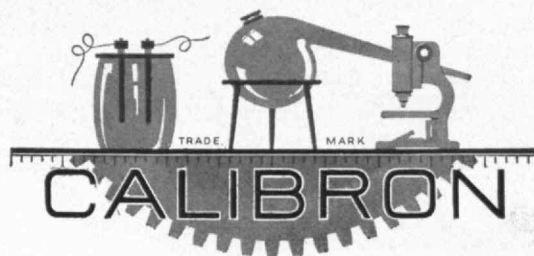
THE reading list on page 371 is presented coöperatively by the M. I. T. Library and The Review as an experiment. Do our readers wish compilations of books in various fields to which they may refer in planning their own reading? If so, the Editors, with the help of the Library, will publish such lists at frequent intervals.

MAIL RETURNS

DEAR REVIEW:

The report of the Visiting Committee of the Department of English and History discusses some matters which appeal to my interest in nontechnical subjects. However, my observation leads me to believe that the majority of engineering students regard most of these subjects as simply annoying interruptions to the business at hand. Even so, much might be done to increase the student's interest. For example, suppose that in my day we had made use of the "History of English Literature" by Taine, in place of Pancoast's prosy manual. In too many cases both textbooks and reading selections seem to have been chosen for their soporific qualities.

It might pay to call the attention of technical students to the fact that two of the greatest English scientists, Tyndall and Huxley, were masters in the use of clear, smooth, and forceful English and that one of them was qualified to write a classic monograph on the life and doctrines of the philosopher Hume. The student might even go so far as to read a few of the lectures and essays by these two men. Of course, it is not given to every man to be able to compose a sentence such as found in the last paragraph but one on page 348 of The Review, but we can at least try.



The first issue of the

CALIBRON NOTEBOOK

contains a description of our unusual Guaranteed Research service, as well as many illustrations of unique engineering developments. We shall be glad to send you a copy upon request.

CALIBRON PRODUCTS, INC.

West Orange, New Jersey

MULTIMETERS and ULTRA SENSITIVE METERS



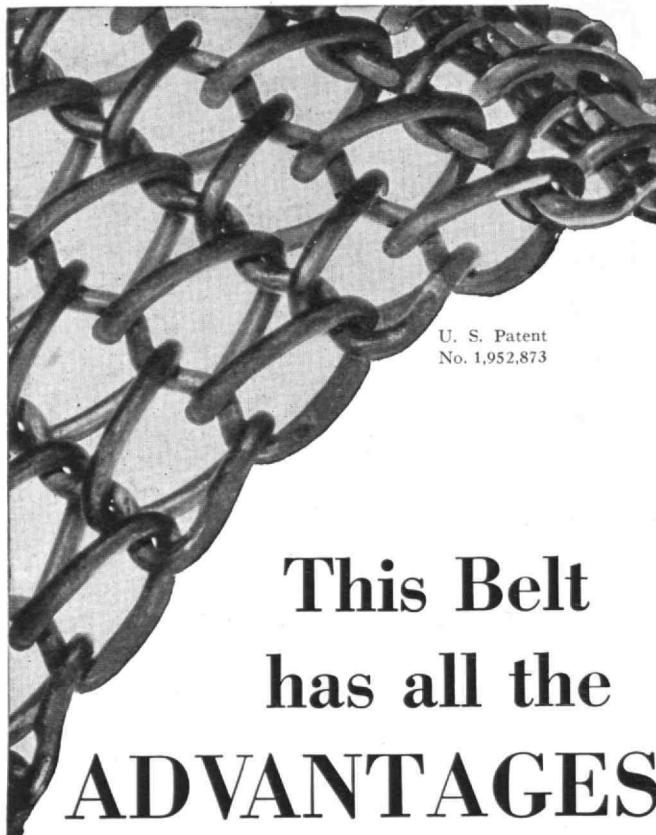
Slow period meters, Dynamometer Wattmeters, Milliammeters and Voltmeters, Ultra-sensitive meters both for AC and DC, Fluxmeters, Electrostatic Voltmeters from full scale 120 volts to over 20,000 volts, Thermocouples, Earth Current Meters, Cable Testers, etc.

Rawson meters are the only ones having two pivot movements whose weight is lifted from jewel when clamped for transit. Electrical clamping does not accomplish this purpose.

Special apparatus built to order

**RAWSON
ELECTRICAL INSTRUMENT CO.**
90 Windsor Street Cambridge, Mass.

BRANCH: 91 SEVENTH AVENUE, NEW YORK CITY
Representative: E. N. Webber, Daily News Bldg., Chicago, Ill.



U. S. Patent
No. 1,952,873

This Belt has all the ADVANTAGES

**RUNS TRUE AND REMAINS
FLAT—DOES NOT DISTORT
AND IS COMPLETELY FLEXIBLE**

This is the acme of design and construction of a Metal Conveyor Medium for washing, drying, annealing, baking and otherwise conditioning materials. It has all advantages both for utility and long life of every known wire belt. The Balanced Spiral is made in all sizes and for all temperatures, load and atmospheric services. Each belt is fabricated only after due engineering analysis from data given on a questionnaire by the user. This way Wissco Belt always gives satisfaction.

Wickwire Spencer Steel Company, 41 East 42nd Street, New York City; Buffalo, Chicago, Detroit, Philadelphia, Tulsa, Worcester; Pacific Coast Headquarters: San Francisco; Warehouses: Los Angeles, Portland, Seattle; Export Sales Dept.: New York City.

WISSCO CONVEYOR BELTS



Wickwire Spencer Steel Co.
41 East 42nd St., New York City

I would be pleased to receive one of your
new Handbooks on Metal Conveyor Belts.

Name.....

Company.....

Address.....

TR

It would be of interest to consider why certain general subjects are made compulsory. How many students wish to, or can, make any use of their smattering of foreign languages? Does not history, as often taught, deserve in considerable measure Henry Ford's comment? Some cynics may even question the benefit of training in the dismal science when they look over the brain trust or when they note that one of the best publicized professors of its mysteries owes most of his notoriety to his advocacy of prohibition and of the rubber dollar.

Many nontechnical subjects are most interesting and stimulating when dealing, as they frequently must, with controversial matters. This presents several obvious problems. You can probably name off-hand at least one organization with intercollegiate affiliations, whose chief purpose is to protect its adherents from the possible effects of any exposure to liberalizing influences.

However, there is much of promise in the Committee's efforts and I know that many besides myself will follow their activities with interest.

HAROLD D. REED, '07

109 Brook Street,
Wellesley, Mass.

DEAR REVIEW:

In the recent controversy, in your columns, over the relative importance of the social and the natural sciences, there was evident a certain provincialism of mind, that mind which assumes that its world is the whole world, or, at least, that its portion is the most significant.

Each side has looked upon the problem from its own somewhat limited point of view, and forgets that there exist other worlds than its own. The academic mind is all too prone to think that it includes all intelligence and knowledge within its province, to assume that only those things which can be taught in the classroom are of value or even exist, and more particularly that only those who do such teaching are competent to judge. This seems to be highly improbable, even in those fields of thought which it rightly claims for its own.

In the case in point, the development of the social sciences, man has already in his history devoted far more attention and consideration to these studies than he has to the natural sciences. We live in a day whose religion is Science, whose high priests are Einstein, Planck, Edison, and Thomson, but we should not forget that "in other days it was not so," that man had other gods whom he worshiped just as faithfully, that the Romans, in government and law, and the Middle Ages, in religion, faced and met just such problems as we do now. For thousands of years far more of the best minds were devoted to social problems than to scientific.

I am perfectly aware that this same academic mind looks down upon the efforts of our governments, especially upon the deliberations of its legislative branch (forgetting that these same bodies look upon us with an equally skeptical and derisive eye). But at any rate, these men are now working on the problems of our society; so are the business men; so are the leaders of labor. It seems hardly possible, then, to assert that we are now expending less effort in numbers and in time on these problems.

The real issue seems to be — are we devoting the right kind of men and effort to the situation? Here, again, we naively assume that our own standards are the only ones, in brief and in essence, advanced degrees. See how it crops out: the *ne plus ultra* of our own world must, of course, be the standard of all others; the ordination into our priesthood is unquestionably the only true ordination! The methods of the physical sciences are the true faith. Believe, ye sinners, and we will send you missionaries to preach the gospel. But may it not be that we ourselves are the "White Man's Burden"? Brahma has many sides and many faces; he has revealed one to us. May he not have revealed another to these others?

Is it not significant that even the minor orders of our faith, the economists, the historians, the sociologists, at first, like all converts, fanatic in their faith, now lean toward heresy and begin to talk of other gods or even of a return to the religion of their fathers?

It does not seem certain that the methods of the natural sciences are the proper ones to apply to the social sciences. Without doubt they are if the social sciences are to be taught in the classroom, if we are to give a Ph.D. degree for their study. Clearly the method of science works in the solution of those problems whose data are fixed, even though as yet undiscovered, and toward which the investigator has no emotional reactions. But is it, therefore, the method to be applied where those data are dynamic, highly emotional, and only with extreme difficulty susceptible of the simplification and abstraction on which the natural sciences depend? (Concluded on page 366)



Chicago — center of American industry—mid-west center of railroad and airway transportation—most air-minded city in America. In transportation time near neighbor to industrial New England. Norton service and distribution center of the great industrial Middle West.

1885-1935
Fiftieth
Norton Year

Norton Grinding Wheels and Grinding Machines are vital tools to the many and varied manufacturing plants of this great mid-west manufacturing territory. Norton Abrasives are employed—in the form of laboratory ware and heavy refractories, in the form of giant pulpstones for converting logs of the forest into newsprint pulp, in the form of porous plates and tubes which make successful the operation of the sewage disposal plants of some of the great cities. Abrasives for polishing. Non-slip floor tiles and treads.

The Norton Building at 4737 South Turner Avenue is the Mid-west headquarters for abrasive products. (LAF 8700).

NORTON COMPANY, Worcester, Mass., U. S. A.

Behr-Manning Corporation and Norton Pike Co., Troy, N. Y. are divisions of Norton Company.



"JINX" DRIVE MEETS MATCH



**Ate up belt every
3 months until G.T.M.
specified COMPASS
2½ years ago**

EVERY plant usually has one hard-luck "jinx" drive. In a large mid-western flour mill it was the hammer mill grinder drive — and few drives are harder in any industry.

This particular drive requires a belt-speed of 8,000 feet per minute under a heavy load. Belt after belt had been tried, but the terrific grind literally wore them to a frazzle in three months, on the average.

Then, to cap the climax, a belt broke one busy morning, ripping out a brick wall, causing a costly delay. An SOS was sent out for the G.T.M.—Goodyear Technical Man.

He came. He saw. He analyzed—measured tension, torque and take-up to a "T"—figured load and overload—and recommended

a Goodyear COMPASS (Cord) Endless Belt.

Installed over two and one-half years ago, this very same belt is still purring a steady song. *After ten times longer service than the average of all previous belts, it has lots of life left!*

Now made endless — on the job

Cases like this — and there are hundreds — prove the remarkable superiority of the Goodyear COMPASS (Cord) Endless Belt on the toughest industrial drives. And now, with Goodyear's new patented vulcanized splice, COMPASS Belts can be made endless right on the job, enabling you to enjoy their

demonstrated economies on drives where heretofore impossible.

Individually specified by 

To no small extent COMPASS' great record is due to the fact that every installation is individually analyzed and specified by the G.T.M. The cost-cutting experience of this practical expert is at your service — just write Goodyear, Akron, Ohio, or Los Angeles, California — or the nearest Goodyear Mechanical Rubber Goods Distributor.

**BELTS • MOLDED GOODS
HOSE • PACKING**

MADE BY THE MAKERS OF GOODYEAR TIRES

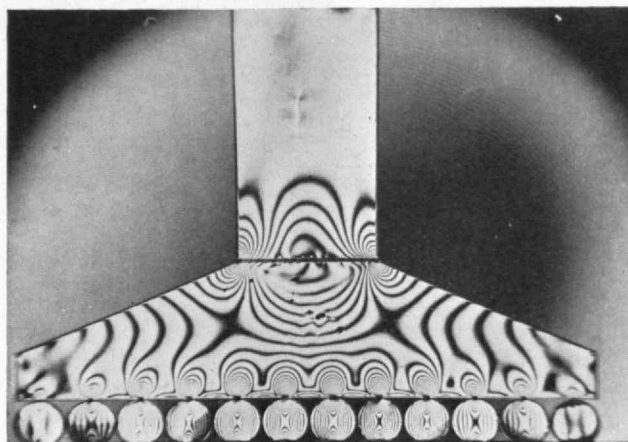
THE GREATEST NAME

IN RUBBER

GOOD YEAR

(356)

Courtesy of R. W. Vose, Department
of Mechanical Engineering, M. I. T.



Patterns of Force
Photo-elastic analysis of
the vertical pressure dis-
tribution of a model wall
footing resting on rollers
(to represent soil pressure)
which in turn rests on soil
—the first time soil pres-
sure has been so analyzed

THE TECHNOLOGY REVIEW

Title Reg. U. S. Pat. Office

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

VOL. 37, NO. 9

CONTENTS

JULY, 1935

MACHINE-MADE BEAUTY BY A. W. K. BILLINGS, JR. 367

The New Profession of Industrial Design

NEW WORLDS TO CONQUER BY KARL T. COMPTON 370

Address to the Sixty-Eighth Graduating Class

THE ENGINEER AND SOCIAL PROBLEMS 371

A Reading List Prepared by the M. I. T. Library

THE TABULAR VIEW 353

Notes on Contributors and Contributions

MAIL RETURNS 353

THE TREND OF AFFAIRS 359

News of Science and Engineering

THE INSTITUTE GAZETTE 372

Relating to the Massachusetts Institute of Technology

Editor

J. RHYNE KILLIAN, JR.

TENNEY L. DAVIS

Publisher

HAROLD E. LOBDELL

Editorial Associates

JOHN J. ROWLANDS

Business Manager

RALPH T. JOPE

JOHN ELY BURCHARD

PUBLISHED MONTHLY FROM OCTOBER TO MAY INCLUSIVE AND IN JULY ON THE TWENTY-SEVENTH OF THE MONTH PRECEDING THE DATE OF ISSUE AT 50 CENTS A COPY. ANNUAL SUBSCRIPTION \$3.50; CANADIAN AND FOREIGN SUBSCRIPTION \$4.00. PUBLISHED FOR THE ALUMNI ASSOCIATION OF THE M. I. T. CHARLES E. SMITH, PRESIDENT; EDWARD L. MORELAND, MARSHALL B. DALTON, VICE-PRESIDENTS; CHARLES E. LOCKE, SECRETARY; J. RHYNE KILLIAN, JR., TREASURER.

PUBLISHED AT THE RUMFORD PRESS, 10 FERRY STREET, CONCORD, N. H. EDITORIAL OFFICE, ROOM 11-203, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE A, MASS. ENTERED AS SECOND-CLASS MAIL MATTER AT THE POST OFFICE AT CONCORD, N. H. COPYRIGHT, 1935, BY THE ALUMNI ASSOCIATION OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY. THREE WEEKS MUST BE ALLOWED TO EFFECT CHANGES OF ADDRESS, BOTH OLD AND NEW ADDRESSES SHOULD BE GIVEN.



Its Quality shines brightest after 10,000 miles

People who have examined the new Master De Luxe Chevrolet marvel at its quality. Very likely *you* will marvel, too . . . because Chevrolet has made this car so big and sturdy—so *fine* in every part—that it no longer looks or acts like a low-priced car! The most pleasing result of this high quality manufacture is that the Master De Luxe will continue to give real satisfaction long after you are satis-

fied you have received full value for the money paid for it. This new Chevrolet has a habit of staying young. Its quality shines brightest after ten thousand miles. The most surprising thing of all is that its prices are among the lowest and that it gives the greatest operating economy in Chevrolet history. But, as we have said before, quality is remembered all the more pleasantly when price is so low.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

Compare Chevrolet's low delivered prices and easy G.M.A.C. terms. A General Motors Value

CHEVROLET
for 1935

TURRET-TOP BODY BY FISHER (WITH NO DRAFT VENTILATION) . . . IMPROVED KNEE-ACTION RIDE . . . BLUE-FLAME VALVE-IN-HEAD ENGINE . . . WEATHERPROOF CABLE-CONTROLLED BRAKES . . . SHOCK-PROOF STEERING

THE TECHNOLOGY REVIEW

Vol. 37, No. 9



July, 1935

The Trend of Affairs

At Random Round the World

GLACIERS of western United States, remnants of the ice age, may disappear in another quarter of a century if they continue to melt at the rate observed during the past year. François E. Matthes, '95, of the United States Geological Survey, reporting at the annual meeting of the American Geophysical Union, finds that the Great Nisqually and the Emmons Glaciers on Mount Rainier receded 125 and 132 feet, respectively, during 1934. For the past 15 years, the Nisqually Glacier had retreated an average of only 67 feet a year, while in 1932 the Emmons river of ice moved back only three feet. The Alaskan glaciers, apparently, are holding their own, and many new ones have been discovered in the past year.

FLUCTUATIONS in the ionosphere, the radio roof of the world, may be due to the combined influence of the ultraviolet rays and the visible rays of sunlight, studies by Dr. E. O. Hurlburt of the Naval Research Laboratory at Washington indicate. The ionosphere lies far above the stratosphere, and is believed to consist of two layers, which, for lack of a better designation, are called *E* and *F*. The former lies some 60 miles overhead, while the *F* layer fluctuates in its position,

varying from approximately 150 miles high at night to 200 miles at midday. In winter, this distance is somewhat less, and during the summer it may be higher.

Air molecules and other particles in the ionosphere, Dr. Hurlburt believes, are charged with electricity and expand under the intense ultraviolet rays as the electrified particles fly apart. The warmth of the sun also causes expansion, and the combined effect is believed to be responsible for the enormous bulge in the radio roof directly under the sun.

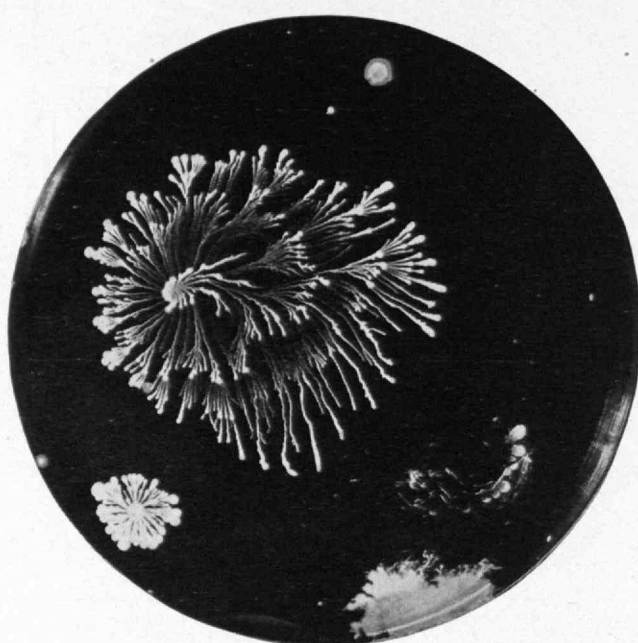
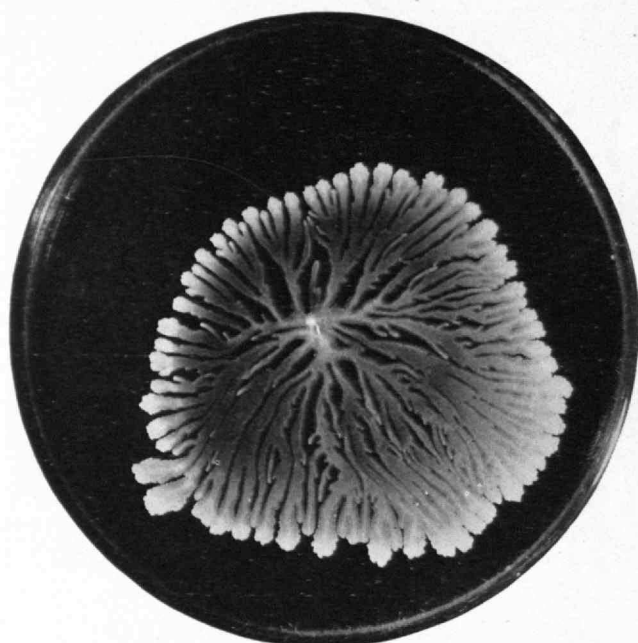
BAEDEKER

For this Section

	Page
SCIENCE CONSPECTUS. <i>Eleven thumb-nail reports of what English and American scientists and engineers are thinking and doing.</i>	359
AMATEUR CINEMA SHOWS THE WAY. <i>How amateur motion pictures in color may revolutionize Hollywood and affect the graphic arts. Three methods of taking colored motion pictures.</i>	361
SUBWAY SAGA. <i>From London's smoky underground railway of 1863 to Moscow's "most beautiful subway in the world" of 1935. With a side glance at construction methods and a coda on smells.</i>	363
SUPERSONIC SOUNDS in the Insect World. <i>The unheard noises that crickets make — and robins, and blackpoll warblers, and leaves in the wind.</i>	366

THE LARGEST all-welded ship in the world is being built by Swan, Hunter and Wigham Richardson, Ltd., at Wallsend, England. Its overall length will be 259 feet, its beam 43 feet, and its depth 22 feet. Fitted with a double bottom as protection against contact with lock walls, it will have a paper-cargo capacity of 2,400 tons, and a grain-carrying capacity of 115,000 bushels on a 14-foot draught. The ship will operate on the Great Lakes.

THE NEW coal-hydrogenation units installed by Imperial Chemical Industries, Ltd., at Billingham-on-Tees, England, are ready for production. The work is expected eventually to give employment to 1,000 operatives and 2,000 Durham miners. About 500 tons of bituminous coal will be treated daily. At present, the vapor-phase units are



Above and on the opposite page: Some of the striking and lovely patterns formed by giant colonies of bacteria grown on agar in Petri dishes, three-and-a-half inches in diameter. The pattern assumed by each colony is fairly constant and characteristic for a given species, and is the result of movements of the cells after reproduction (post-fission movements)

manufacturing gasoline from creosote oil. The plant cost nearly \$23,000,000, and is regarded as the greatest industrial development on the Tees since the discovery of iron ore in the Cleveland hills.

A PLAN to park cars underground by making room for thousands of them along the route of the projected Sixth Avenue subway in New York City has been submitted to the mayor by Dr. G. Van Antwerp Clarke, formerly chief engineer of one of the units of Rockefeller Center. Lifts would be provided at one- or two-block intervals along the route of the subway. These would receive the autos at surface level and carry them down to the storage level. All the driver would need to do would be to drive on a lift and deposit a quarter or other fee in a slot in a control standard there provided. The rest would be automatic. For, on reaching the proper underground level, the car would be picked up by a transverse conveyor and stored in a vacant cell, from which it would be returned to the driver when he deposited the individually punched check he received from the slot on making his payment.

A UNIQUE type of antenna system, especially well suited for all-wave receiving sets, was recently introduced as a result of discoveries by General Electric engineers in designing aeriels for short-wave stations W2XAD and W2XAF in Schenectady. It provides more uniform sensitivity in the short-wave bands than does the conventional antenna, and it also enables an automatic change from short waves to standard broadcasts without the aid of a switch. It minimizes local man-made interference, such as that radiated by house wiring systems or the ignition systems of passing automobiles.

The new type antenna has been called the "V-doublet" system. It lends itself to various methods of suspension and is simple to install. As the name implies, it consists of a doublet-type antenna, the center part

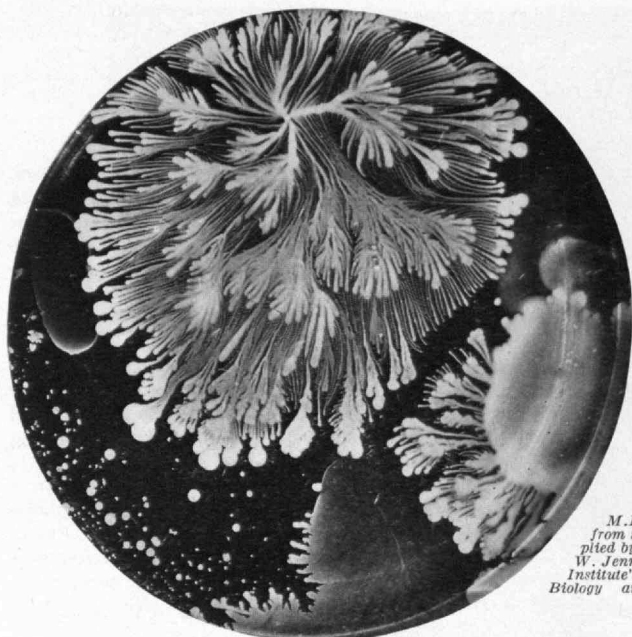
of which is shaped like a V. Signals intercepted by the doublet are fed from the V portion through a lead-in composed of a balanced pair of twisted wires, known as the transmission line, to a specially constructed receiver-matching transformer located at the set.

MAGNET wire has been put to a new use by one of the large oil companies in Texas. The company uses very high explosives in its field work, and the men on this work must keep in constant communication with their bases. Stringing regular overhead telephone wire would be too costly. Each man, therefore, as he leaves his base, straps a five-pound spool of Number 24 gauge, single, cotton, enameled, bonded magnet wire on his back so that it unwinds as he walks. On reaching his destination, he cuts the wire, fastens it to his hand telephone, and is connected with the field headquarters. When a job is finished the wire is discarded.

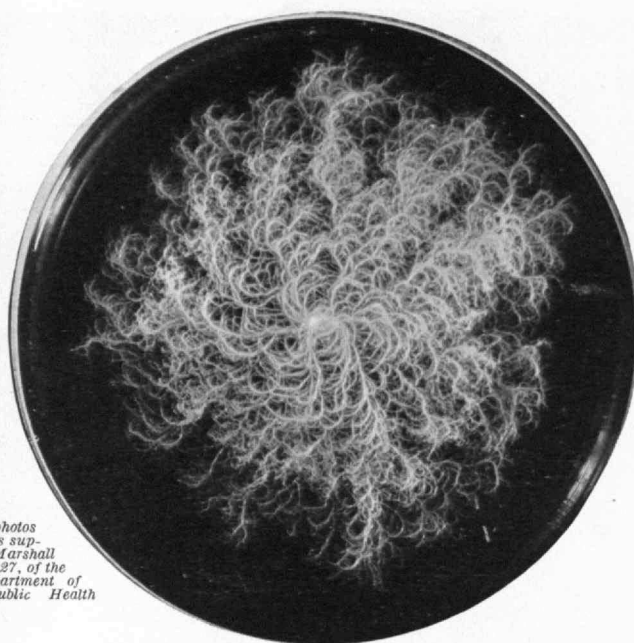
STAINLESS-STEEL pianos, if experimental work now in progress gives the hoped-for results, are to be a joint creation of Steinway and Sons, piano manufacturers, the American Steel and Wire Company of Cleveland, and L. C. Smith and Corona Typewriters, Inc. Present information indicates that the new-type piano will weigh considerably less than a wooden one and will have an all-metal case and sounding board. The frame will be welded and will be reinforced by a new brace-beam.

AS PART of the Government's flood-control plan for the Mississippi area, and in connection with the dam at Canton, Mo., the General Electric Company is supplying giant electric heating units which will help to prevent freezing and facilitate the movement of ice.

These heating units will be placed at the ends of the dam, where the huge drums of which the dam is constructed rest in sills cut in concrete piers. Some of the



M.I.T. photos
from samples sup-
plied by Dr. Marshall
W. Jennison, '27, of the
Institute's Department of
Biology and Public Health



Left, on opposite page: *Bacillus megatherium*, the individual cells of which are among the largest known in bacteria. Left, above: Note apparent depth of colony as a result of variation in width of streamers. Right, above: The streamers of this species almost invariably curl clockwise. The remaining colony is unknown

units, which employ the Calrod system, are as much as 27 feet long, but, in spite of their great size, the power rating for one end of a roller drum is only 18 kilowatts. The drums themselves will be 109 feet long and 20 feet in diameter.

THE SAND on sandpaper is now put in its place on the working surface by electricity. Each particle (there are a quarter of a million to the square inch if the paper is of the "smooth" variety) is treated separately with a method perfected by a Birmingham firm in England.

The paper or cloth backing is first passed between two rollers for the purpose of applying a thin coating of glue. It then moves between two electrodes charged with 100,000 volts, while the sand is fed between the rollers. The grains so electrified are forced into the glue in such manner as to leave the sharp ends and edges standing erect, in obedience to electrical principles. Since the grains are charged with high-tension electricity, they repel each other with equal force and become evenly spaced in a uniform coating.

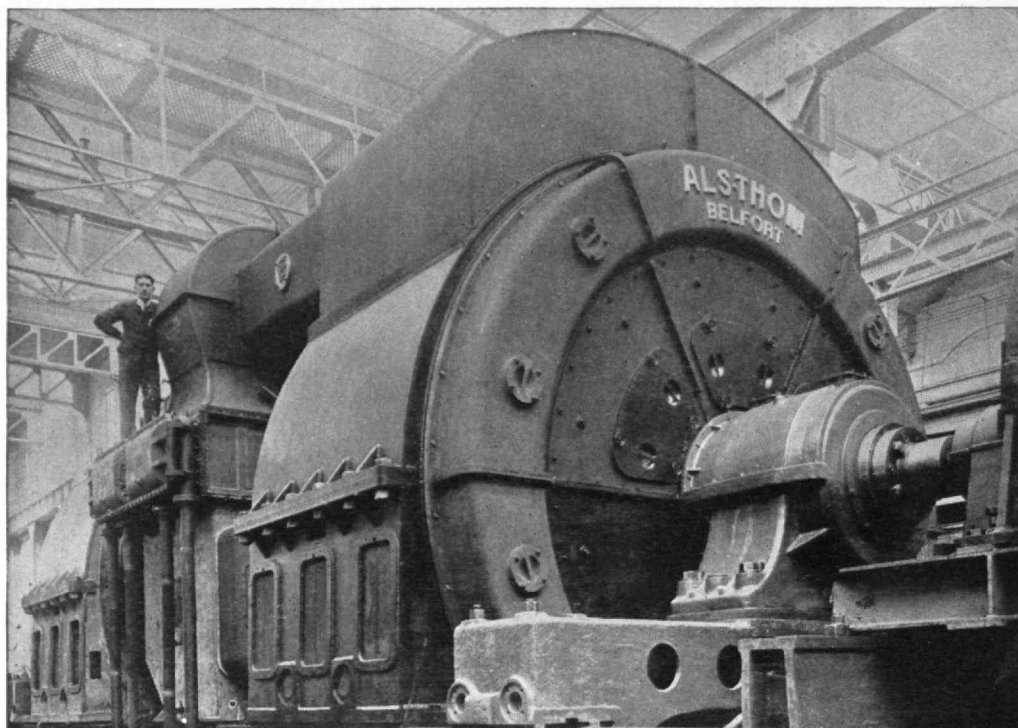
FORECAST of a simple yet efficient automobile, designed for utility rather than luxury, costing but \$200 is one of the points of interest in Jonathan Norton Leonard's new book, "Tools of Tomorrow." No car in the present lowest-price group is produced specifically to give ordinary transportation service at low cost. In this sense, there is now no cheap car. No technological difficulty stands in the way, the writer holds. The trouble is simply that if such cars are to be made commercially worth while, they must go into mass production in order to compete successfully with the cars in the next higher price range, produced on a mass basis. Yet the writer contends that the demand, both domestic and foreign, is latent and can be made effective if the \$200-car is produced in volume.

Taming the Rainbow for the Camera

PERSISTENT and enthusiastic amateur cinematographers, in whose hands has lately been placed the ability to make motion pictures in full colors at small additional expense and without special skill, may revolutionize the motion-picture industry.

Professor Arthur C. Hardy, '18, who, as Vice-President of the Optical Society of America and as a member of the Society of Motion Picture Engineers, has unusual opportunities for observation, suggests that the amateur and the many friends who see his work may force the adoption of color for the motion-picture drama, even if the industry's new enthusiasm for color weakens after the present splurge in feature pictures. He believes that any group that discovers the beauty of color in photography will no more be satisfied to return to black and white than to dispense with sound and return to the silent motion picture. The question the producers will have to answer in the future is: Will the amateur who can make his own family pictures in color go to his neighborhood motion-picture theater to see plays in black and white?

It is not difficult to account for the return to black and white after the early attempts to bring color to the screen. The pictures made a few years ago were produced by a two-color process which limited the gamut of colors and the faithfulness of their rendition. The first successful attempt was followed by others and public interest, aroused at first, waned. The producer, already in a frenzy over the technical problems of the talkies and the difficulty of teaching actors the difference between noises and coherent sound, wiped his brow in relief and stopped playing with the rainbow. Subsequent improvements in the technicolor process and the success of Walt Disney's unforgettable "Three Little Pigs" in color reawakened Hollywood's interest. The first full length feature has already been completed



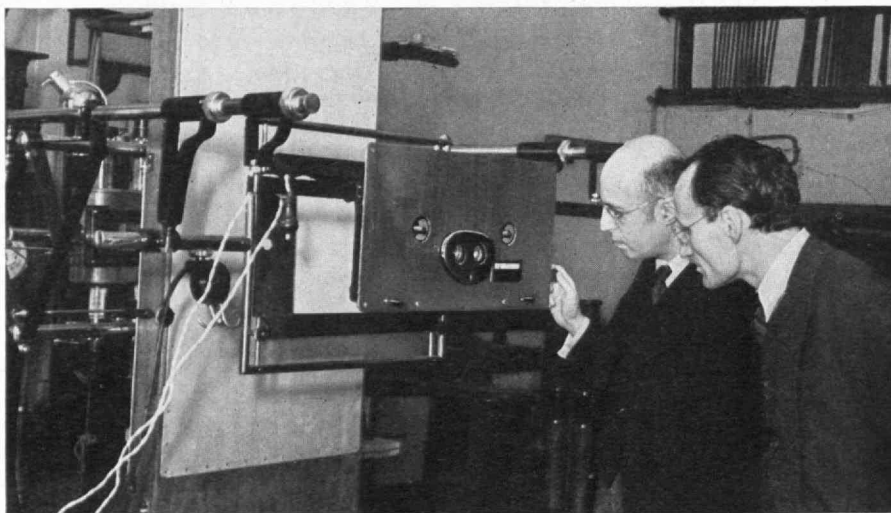
Left: One of the four motors, largest ever built, that drive the Normandie. The electric generating plant of this largest and fastest of ships develops 160,000 horse power, enough to supply the demand for electricity of the entire city of Boston. Als-Thom, builder of the motors, is the French associate company of General Electric

Below: New aid for diagnosis. A three-dimensional X-ray invented in Russia for viewing the internal organs of the body stereoscopically

and others are in preparation. There is likely to be the usual imitation, which was manifest in the recent, but not-to-be-lamented, gangster era and the present vogue for department of justice themes, but out of it all will come advances in the use of color.

Meantime, research on color in photography is progressing. Amateurs are consuming Kodachrome color film for home photography and for use among the amateur motion-picture drama groups far in excess of the anticipated demands. An intelligent and critical section of the public is thus cultivating a taste for color in motion pictures.

While it is too early to predict the future of the Kodachrome process, which requires no special camera or auxiliary equipment, indications are that it will entirely replace black and white. The only difference in using the color film is that the lens must be opened one stop larger than for the conventional black and white film. In Kodachrome film, three emulsions of extreme thinness, each sensitive to one of the three component colors, red, blue, and green, are laid one upon another on the film stock. In development, the true color value of each emulsion is brought out in relation to the others. The result is a photograph which reproduces the color of the actual scene so faithfully that a black and white reproduction seems crude. So far, Kodachrome is available only for amateur use, and no provisions are offered for making duplicate copies. However, there seem to be no technical obstacles to making prints when the demand arises; nor is there any reason to believe that this process will not eventually be applicable in the professional field.



Science Service

At the moment, Hollywood has at its disposal Technicolor, the process which has been developed almost wholly by Technology men. Dr. Herbert T. Kalmus and Dr. Daniel F. Comstock, both of the Class of 1904, began their research when they were members of the staff of the Institute. Later, Ernest W. Wescott, '14, joined them, and in further developments the late Leonard T. Troland, '12, and Joseph A. Ball, '15, (now Vice-President of the company) had an important part.

In the Technicolor process, a special camera carrying three films and employing a color-separation device which splits the ordinary image into three images, is used. Each of these is registered in one of the primary colors on a separate film in varying degrees of black and white. Manipulation of the three films makes possible the final color positive.

Another process, the English Dufay color film (described in The Review for May) is quite the opposite, for here the color is developed in the film exposed in an

*The American Philatelist*

Three of the four stamps issued to commemorate the opening of the new Moscow Underground, described by the *Bulletin* of the Soviet Philatelic Association officially as "Spartakiada" stamps which, the *Bulletin* explains, means "physical jerks" (see below)

ordinary motion-picture camera. The process, which fundamentally is not new, consists of printing lines of the three primary colors in a crisscross formation on the emulsion of the film. Duplicate copies made by this process have been improved.

If, as now seems likely, the motion-picture industry must, within the near future, consider a growing public demand for pictures in color, many changes in the art will be necessary. With changes in studio equipment, make-up, costuming, will come advantages. The control of moods by lighting, an important influence on the legitimate stage, will at once be apparent. Color will be used in new ways on a scale not always possible within the limits of the theater. The prospect is inspiring, and one worthy of the best minds in the theater.

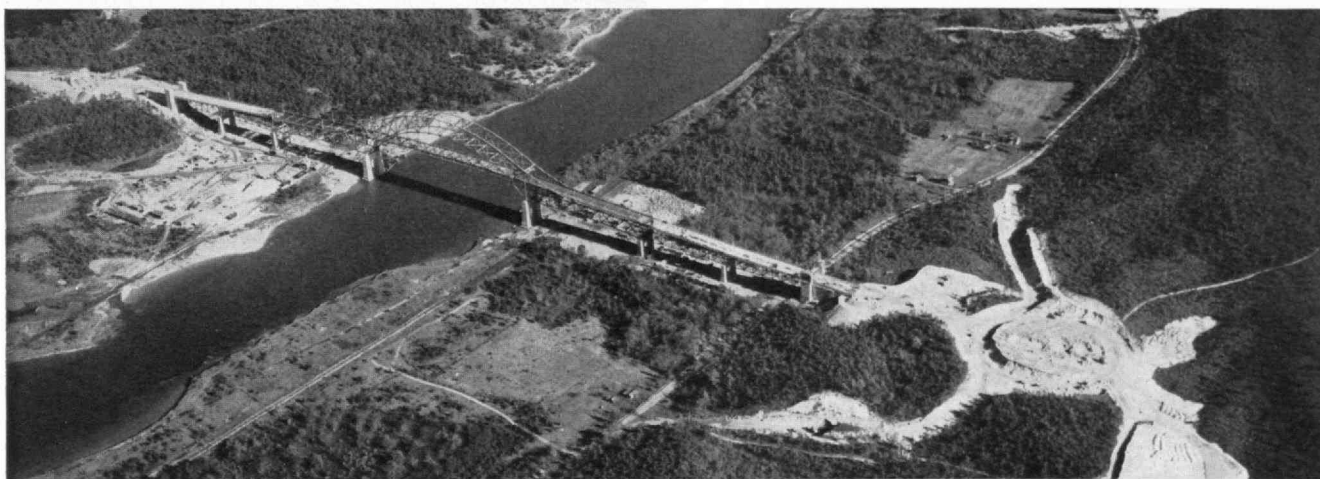
The universal use of color in amateur and professional motion pictures will undoubtedly have important ramifications. There is at the moment no process for making opaque prints in color with anything like the ease with which black and white prints can be made. The photographer who makes still pictures, however, will demand a process for making reproductions in color when its use becomes universal in the motion-picture field. There seem to be no technical barriers that are insurmountable, but merely the usual amount of development that is required to reduce any procedure to practice commercially.

If both still and motion-picture photography abandon black and white in favor of color, it will also have an important effect on the graphic arts. In this field there is at the moment considerable use of color, chiefly by magazine advertisers, although color is already ex-

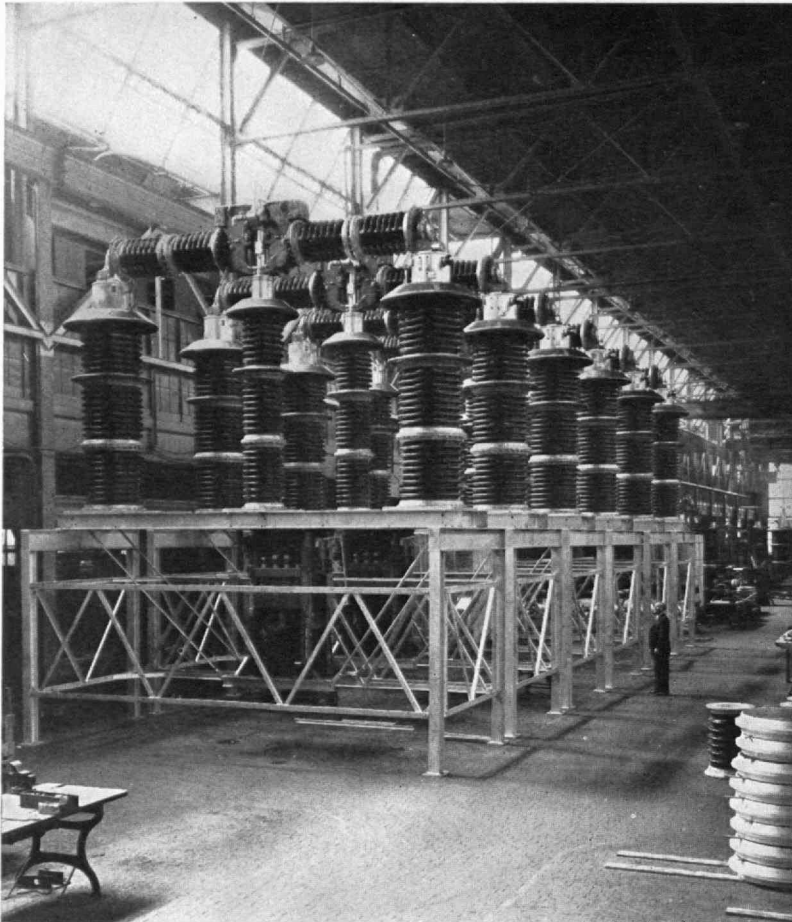
tensively used in newspaper advertising. The prevailing use of color in the packaging of commodities of all sorts makes it desirable that the advertising of these commodities also be in color, especially since the advertising frequently carries a reproduction of the package. At the present moment, there is an economic balance between black and white and color reproduction in the graphic arts, but this balance can be upset easily if the trend toward color reproduction continues at the rate that prevails at present and if a less expensive method of making color-printing plates becomes available, as it must. Black and white photographs were regarded as freaks when they were first introduced, and they may be so regarded again.

Follow the Red Line

MUSCOVITES astonished themselves and have confounded foreign critics by opening the seven-and-a-half-mile central section of their new subway within two years. Plans were still in the talkative phase until 1931; digging began only in 1933. Yet last April, Stalin was ushered down the first escalator ever installed in Russia to board a shiny, brand-new, buff and red, four-car train for an inspection trip. Later, on the opening day, 372,000 passengers were carried, and by mid June nearly everyone in Moscow had had a ride. This they eagerly sought, for, in the haste to complete the project in record time, nearly every able-bodied man and woman in Moscow is said to have dug in this subway at one time or another.



The slender, graceful span of the Bourne (Mass.) Bridge (designed by Fay, '93, Spofford, '93, and Thorndike, '94, of Boston) across the Cape Cod Canal, adjudged by the American Institute of Steel Construction to be the most beautiful bridge costing \$1,000,000 or more built in America during 1934. John B. Wilbur, '26, Assistant Professor of Civil Engineering at M.I.T., assisted in the design. As this and its companion bridge at Sagamore go into service, model studies for the widening of the Canal progress in Technology's River Hydraulics Laboratory



Circuit breakers, operating at higher voltage and faster by two-thirds than any others commercially installed, to be placed in service along the 287,500-volt 270-mile transmission line from Boulder Dam to Los Angeles

Science Service

Obediently the Soviet press acclaim this new underground as a "mighty agitator for Socialism" but outside Russia it is hailed for its beauty. Kaganovich, recently created Commissar of Transport for carrying the subway's construction to completion, should be pleased, because in his advance announcement he said he would build the "most beautiful subway in the world." Even the correspondent of the usually conservative *New York Times* says Kaganovich succeeded in his ambition, but adds truthfully that "it is the first subway in which beauty has been attempted."

Beauty, even in an elementary sense, was rightfully disregarded by the builders of the London Metropolitan-District Railway, the first, and for many years the world's only, underground city-railway system. From 1863 down to the early 1900's, steam was the motive power and the locomotives, though of a so-called "smoke-consuming" type, simply did not perform that highly laudable function. The line was designed to connect 12 railway stations, then located on the outskirts of the business district, with one another and most of the construction was in shallow cuttings with some sections in open cut.

At that period several of what are still considered to be among the world's monumental railway tunnels were abuilding: the Hoosac, started in 1854; the Mont Cenis, to connect Piedmont with Savoy, in 1857; and the St.

Gotthard, also under the Alps, in 1872. These were completed in 1876, 1871, and 1882, respectively. Lessons derived from their construction, the development of the Greathead shield, and advances in the art of using compressed air in tunneling, all played a part in the undertaking of the London tube railways, the "tuppenny tubes," in 1886.

Marc Isambard Brunel, who afterwards built the Thames tunnel between Rotherhithe and Wapping, had patented a tunneling process which included a shield and which mentioned cast iron as a surrounding wall, as early as 1818. Fifty-one years later Peter William Barlow and his pupil, James Henry Greathead, built the Tower footway under the Thames, using for the first time a cast-iron lining and a shield which embodied features of Brunel's design.

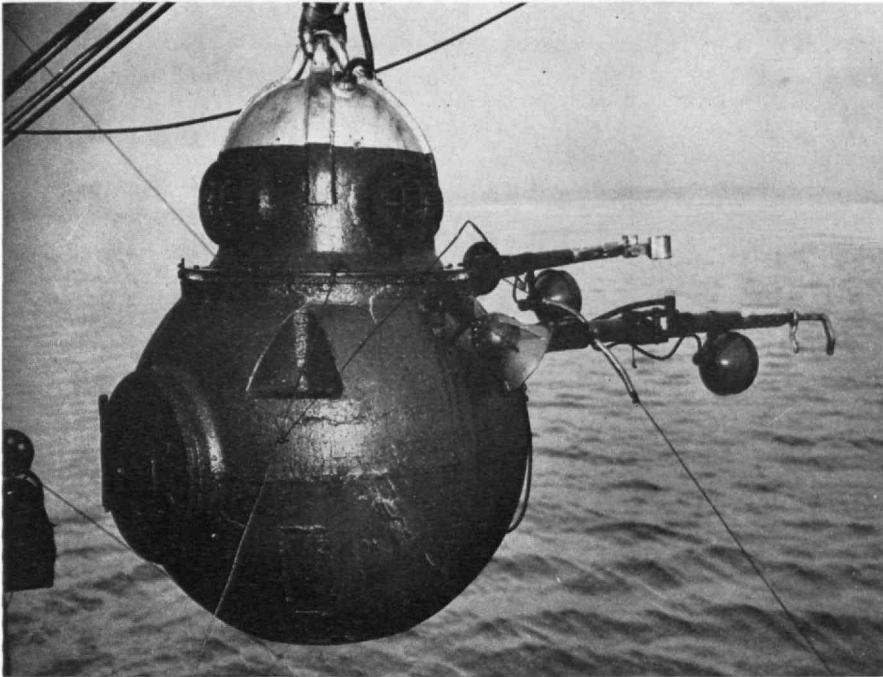
Compressed air as an aid for tunneling in water-bearing strata had been patented in 1830 by doughty Admiral Sir Thomas Cochrane, subsequently 10th Earl of Dundonald, but it was almost a half century later before compressed air was used in important tunnel work. The initial enterprise was D. C. Haskin's start, in 1879, on the first Hudson River tunnel which, following an extended series of mishaps, was finally completed in 1908 under the direction of Charles M. Jacobs.

The "tuppenny tubes," the first of which was for the City and South London Railway, were twin cylindrical borings about 12 feet in diameter driven through the London blue clay. A great degree of accuracy was attained and it is a matter of record that two shields, starting three-quarters of a mile apart, met practically edge to edge. These tubes are still the world's deepest subway, the station at Hampstead Heath being nearly 300 feet below the surface.

Glasgow, Budapest, Boston, and Paris followed London's lead and started construction of subways during the 1890's. That in Glasgow, built by a private company under Parliamentary powers, began service under the cable-haulage system in 1897. Very recently its six-and-a-half-mile route of double one-way tunnels which converge at stations has been electrified.

Budapest and Boston had underground transit by 1896 and 1897, respectively. Budapest merits special interest because here electrical subsurface operation had its birth, as did the flat-roof, structural-steel type of subway which allows construction near the street level, thus providing convenience for passengers and a minimum of building cost. The Tremont Street subway in Boston, built under the direction of the late Howard A. Carson, '69, was the second in the world for street cars.

Although studies for an underground in Paris were considered as early as 1870, an actual start on the *Métropolitain* was delayed until 1898. The first section of this very excellent Metro, the third largest of the present-day subway systems, was opened in 1901.



Science Service

Two-ton bathysphere, with moving arms, for deep-sea salvage down to 2,500 feet, developed in Seattle. Salvage of sunken ships is becoming a large industry. An Italian company retrieved \$5,000,000 in gold from the Egypt, operations are in progress to recover the cargo of a rum-runner off Cuttyhunk Island, and \$2,000,000,000 may be available in other sunken ships in the Seven Seas

A half century after the Brothers Fudge — Job, Samson, and Solomon — cut America's first tunnel through a Pennsylvania ridge to allow passage for the Skuykill Canal, Alfred Ely Beach proposed to try the idea under city streets. This was in 1868, and, like Greathead, he had an idea for a shield by which he planned to drive a tube operated by pneumatic power to carry letters, packages, and eventually passengers, under lower Broadway. A short experimental section was built, but local politics, fear for foundations, and the coming of the elevated railways proved too much for Beach's plan. Manhattan Island was obliged to get along without very rapid transit for another 35 years.

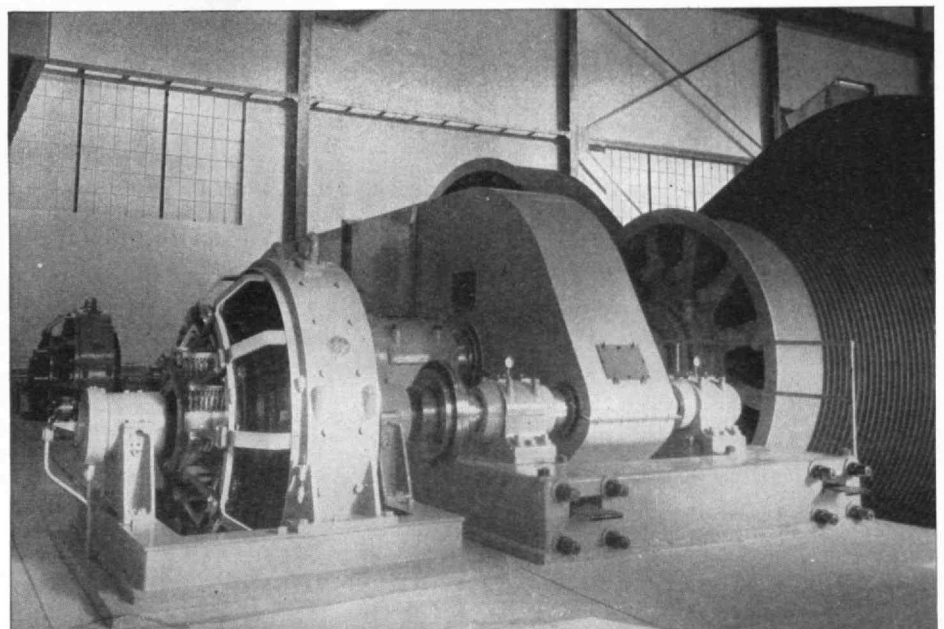
In 1900, John B. MacDon-ald, financed by a syndicate headed by August Belmont, received New York's first subway contract — \$37,750,000 for the Fourth Avenue line. The chief engineer was the late William Barclay Parsons. Ground was broken March 24, 1900, and service began October 27, 1904. During the ensuing 30 years \$1,150,000,000 has gone into New York's mighty subway system, which now operates a total track mileage of 463, and to which additions such as a Sixth Avenue line are now being urged. Unlike London's

subways which carry hardly more than a tenth of her traffic, the network of borings under Greater New York is most essential to the continued existence of that congested area. Consequently, there has been justifiably spent upon the New York subway system a sum far in excess of the cost of undergrounds contemporarily built in Berlin, Philadelphia, Liverpool, Tokyo, Madrid, Buenos Aires, Sydney, and — only this spring — in Newark.

In none of these, however, has the question of beauty received very much more attention than in New York. Moscow's line, on the contrary, has stations with spacious platforms and lofty vaulted ceilings (in "chastely ornamented plaster", says one non-Soviet writer), walls which are sheathed in vari-colored marbles from the Urals, one station with mosaics depicting diggers at their labors, and broad staircases to give easy egress to the streets. Moreover, we read that no two stations are

decorated alike! Truly a situation that belies the accepted axiom that a subway is but a convenient method of traveling inconveniently.

In fact, the press descriptions of the new Moscow underground are singularly lacking in everything except superlative generalities about its lovely appearance. The London *Times* man does record that it has the "most up-to-date rolling-stock and electrical equipment." But that is about all and it leaves one wondering



One of the largest mine hoists in Western Hemisphere, recently installed at the Homestake Mine, Lead, S. D. Requiring 1,500 horse power, the hoists weigh 210,000 pounds

whether the seating capacity of the cars is more adequate than on a Bronx Express and whether Kaganovich has tried to cut down the noise from the 80-decibel range of an ordinary subway car to the 60's as the Interborough plans to do. Then, too, do the Moscow cars carry as good system maps as the Paris Metro; are they choked with advertising to the extent that strap hangers, as in Buenos Aires, must clutch tightly ads wrapped around the handles by which they steady themselves? Are the handsome stations plentifully equipped with well-illuminated name signs as in Berlin? Or don't the Soviet trains run fast enough to make such provision imperative? Do they have quiet turnstiles such as those lately introduced in New York? Are the monumental entrances supplied with foot-and-a-half high lettering which is helpful in Tokyo? If there are transfer points — and what subway doesn't have them? — will they prove as complex and irritating to strangers as Piccadilly Circus or Park Street, and will faltering footsteps be guided by painted lines? Red lines, of course, instead of green.

For the answers, we look to returning tourists. They can tell us whether attendants — more polite than in Jersey City, we hope — start trains with a horn as on the Metro, whether Soviet edict endeavors to swell subway revenues by imposing odder regulations than the Australian laws do in Sydney, whether the "beauty" in Moscow is enhanced by a neatness such as characterized Madrid's underground before the revolution. Finally, we look to late summer visitors to tell us confidentially what chance Komsomolskaya Station has, given time, of yielding to one and all as ripe an odor as Times Square.

An Ear for an Ear

STUDIES of the amatory trills of cricket *Nemobius Fasciatus*, lively denizen of summer fields, by means of a delicate new device for detecting supersonic sounds, open the way for analysis of many of the hitherto inaudible noises of nature.

The highest rate registered by the human ear is 18,000 vibrations per second. Scientists have long wondered whether birds and animals produce supersonic sounds, that is, sounds above the range of human audibility, but until recently no adequate means existed for detecting such vibrations and determining their pitch.

Making use of magnetostriction and piezo-electric controlled oscillators and detectors, Professor George W. Pierce and assistants in the Cruft Laboratory at Harvard University have developed apparatus sufficiently sensitive to pick up the song of a cricket 200 yards away. A Rochelle crystal is put into a parabolic horn which can be directed toward a noise. When a sound strikes it, it gives rise to a varying voltage across two metal plates holding it. This electric variation is amplified; the amplified variation is then heterodyned or combined with a vibration of a different frequency. By superimposing these two vibrations, which are applied to a vacuum tube detector, there is produced in the loudspeaker an audible vibration, analysis of which determines the nature of the audible sound.

The shrill songs of *Nemobius Fasciatus* were found to

have a main frequency of about 8,000 vibrations per second, or a note five octaves above middle C, together with strong vibrations at 16,000, 24,000, and 32,000 per second. Visual analysis of the cricket's wing mechanism was made possible by Professor Harold E. Edgerton's, '27, stroboscopic camera.

Professor Pierce has listened to other noises, such as the song of newly-hatched robins, which is loudest at 15,000 and that of the blackpoll warblers, which sing at about 15,000 vibrations per second. In addition to animal sounds, he has found a large number of persistent supersonic noises, such as the vibrations emitted by leaves in the wind, by air jets, the rub of clothing or of hands, or the burning noise of a freshly lighted match.

MAIL RETURNS

(Concluded from page 354)

It is this method, however, which underlies all academic knowledge. Even though the ritual on the high altar is research, the teaching of the novitiate aims toward their first mass. It is, therefore, highly questionable whether this method of training for the admittedly important solution of social problems is the correct one. We have tried that "noble experiment," and its results are seen in the recent era of "Brain-Trust-Busting." The finest products of the very thing Professor Passano advocates have been given all the power they could possibly want, more money than they could possibly spend, and yet the millennium seems even farther away than before.

Evidently our past and current efforts to solve social problems need to be translated into academic terms before they can be recognized. To put it on a purely financial basis, the Federal Government, alone, grants two-year fellowships to 435 "promising young men" with the usual characteristics of "demonstrated ability in their field, qualities of leadership, speaking knowledge of one language (American), and reading knowledge of another (English)." Quite generous grants they are, too — \$10,000 a year, to say nothing of the allowances for experimental work — far, far beyond the dreams of any college president. The Government even has 96 Senior Fellows with more generous stipends, clerical service, and free hair cuts. What college in the country offers free hair cuts to its Senior Fellows?

But this is only the Institute for Advanced Study of this system of research. There are lesser institutions called legislatures, city councils, and so on. And yet we are told that we spend far too little on the men who are working on these problems. It would then appear that what Professor Passano wants is more teachers of a science which as yet does not exist.

It will, of course, be argued that these Fellows in Government lack the disinterested desire for Truth which is, by the naïve, supposed to characterize the natural scientist, as exhibited in the present discussion over cosmic rays, or, say, the Newton-Leibnitz controversy. With only passing mention of the fact that our courts are the engineers of the social sciences, I might question our own integrity and competence. Is the academic world more free from the incompetent, the lazy, the grafter, the "politician"? The contrary belief arises from that same provincialism and from a willingness to "believe what we read in the newspapers." I rather suspect that the academic world would appear in a sorry light were the spotlight of the press focused on us. We do not get our faults continually before the public, and I rather suspect that a closer acquaintance with "these fellows" would enlighten us not a little.

Their methods of doing things are clearly not ours, but neither is their problem. At any rate they are closer to their problem and their facts than we are. The advances of science are made in close contact with facts in the laboratory. The laboratories of social research are the law courts, the legislative chambers, the committee room, the labor meeting, the social service center — and not the library and the classroom.

ROBERT S. WOODBURY, '28

M.I.T.

Machine-Made Beauty

The New Profession of Industrial Design

BY A. W. K. BILLINGS, JR.

A PROFESSOR was delving into experiments to determine the mentality of apes. He filled a room with toys, books, ladders, jig-saw puzzles, and whatnot, turned on bright lights, put the ape into the room, and then tried to peek through the keyhole for purposes of observation. Strangely enough, the room was in darkness and he could see nothing. He asked his assistant to look in through the transom to determine what was wrong. The man was astonished to find the ape with his eye close to the inside of the keyhole trying to look out!

Here we have two diametrically opposed viewpoints, but with the same object. Manufacturers universally desire to attain the same results — increased sales and bigger profits — but the points of view which direct their efforts to attain these results are sometimes humorous. For a product to sell successfully, it must have the confidence and approval of the public, and this good will is slowly built up through advertising, education, and past performance. This approval includes appreciation and acceptance of the artistic merit of the product. Many manufacturers have been blind to the demands of a growing design-minded public for products which are attractive as well as useful.

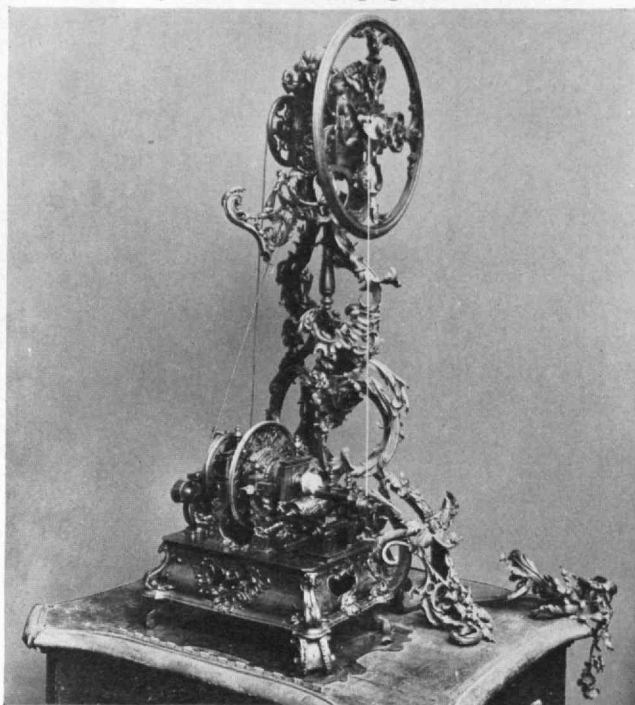
"But we used to sell lots of stuff and we never bothered with design," some will say. Yes, but that was in the Klondikean days of 1929 when competition was not so keen and people were not so fussy about their dollars, before the influence of good design had become universal. Those few and bold thinkers who saw beauty in the naked structure and who preached the Ruskin doctrine of making form and function a unity had not yet brought their influence to bear. It was not until some publishers, motion-picture designers, artists, and architects realized and adopted this truth in their designs that it came before the public eye and was accepted. And then, when taxes mounted and incomes dropped, people evaluated their purchases more. Appearance has value and the public, as a few progressive manufacturers found out, pays good money for this sort of value.

The question of what is and what is not good design is open to controversy. To begin with, we may eliminate all objects which are purely æsthetic, such as pieces of sculpture and paintings, for beauty in such objects is largely a matter of opinion which does not bear upon the consideration of good design as it concerns industrial products.

Utilitarian objects must be primarily functional. If an object does not express, in form and æsthetic feeling, the use for which it was made, then it is not well designed. A radio should look like a radio, not like a hope chest or a wine cabinet; a smoking pipe should look like a pipe, and not like a sculpture of Leif Ericsson

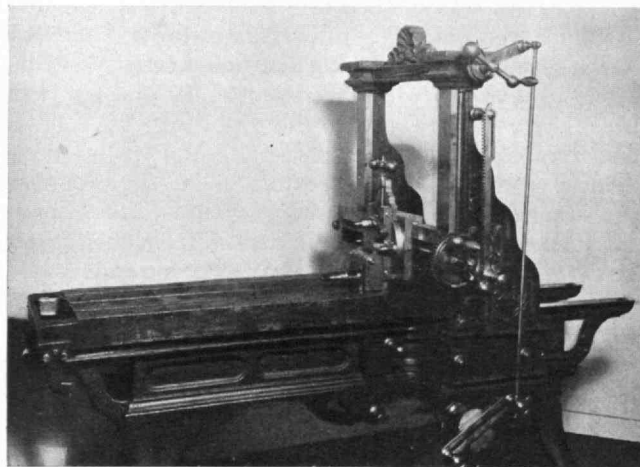
Funny to Functional

The Decline of Machine Tool Spaghetti



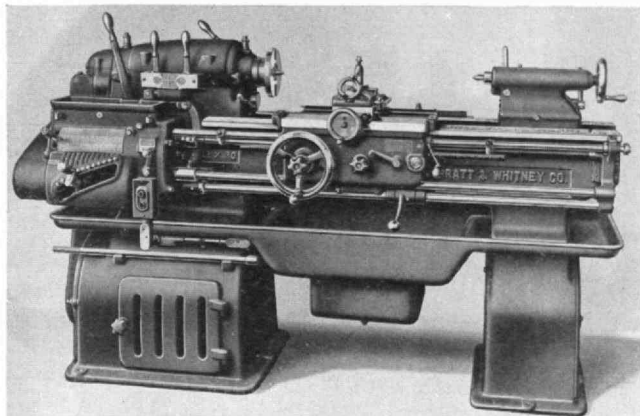
Science Museum, London

1750. Spaghetti Galore. German rose engine with its ornament drooling off the table

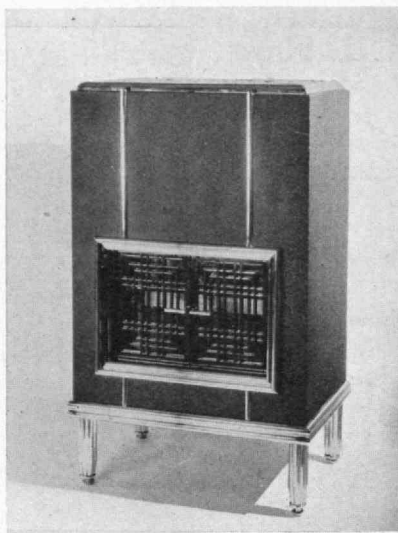


Museum of Science and Industry, N. Y.

1850. A Little Spaghetti. Pre-Civil War lathe



1935. No Spaghetti. The clean functionalism of the modern lathe



A heater should look —
not like a radio . . . but like a heater
Oil burning space heater with steel cabinet, imitation wood finish *As redesigned by Walter Dorwin Teague, it has an individuality of its own*

or a nude figure held between the teeth. Let me illustrate with the true account of an uninformed lady.

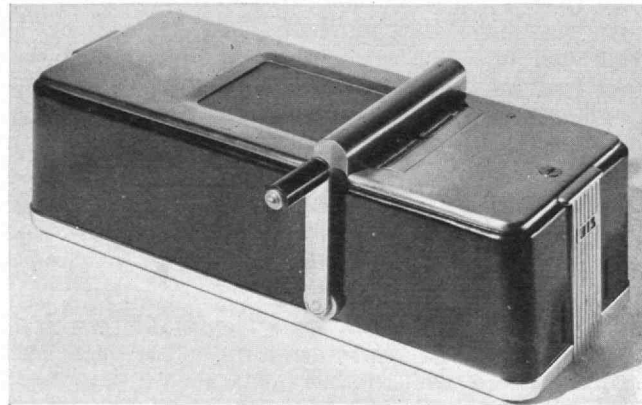
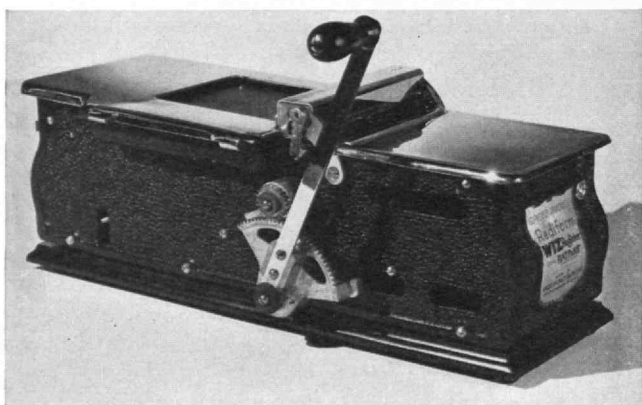
A distinguished American woman was shopping one day in a slummy section of the European city where she was then living. In a nook of a dusty and disheveled secondhand shop, her eyes fell upon as nicely a proportioned vase as she had ever seen. She was delighted. Without even bothering to bargain or to have the vase wrapped, she paid the asking price and hurried down the street to a trolley which transported her and her cherished object homeward. On the way she gazed lovingly at her vase and marveled at the ability of native workmen to produce a piece of pottery of such flowing lines, such exquisite proportions. Her rapture blinded her to the sidelong glances and restrained smiles of those about her. At home she proudly displayed the jar to her maid, whose ill-suppressed mirth at the sight of it prompted our distinguished lady to demand an explanation. By the combined aid of signs, a smattering of the native tongue, and a dictionary, our art collector discovered that the jar was not a jar. It turned out to be — well, a utility vessel rendered obsolete by modern plumbing. Graceful lines — bah! Exquisite proportions — bah!

She opened the door and with a heave unbecoming a lady sent the work of art to a multiple-point landing on the marble steps of her home.

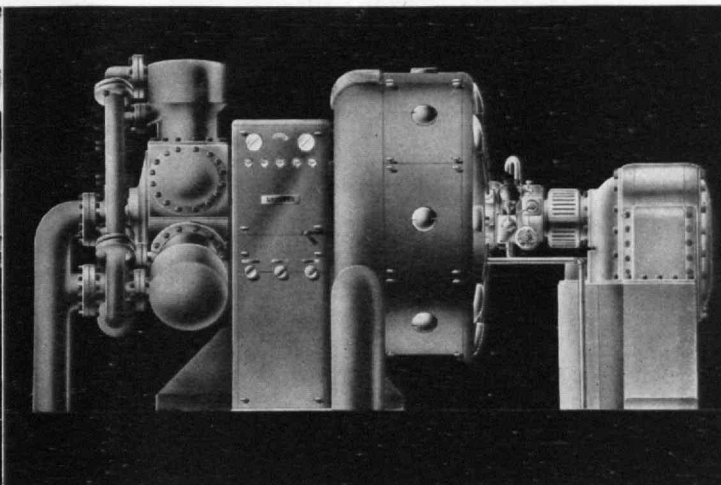
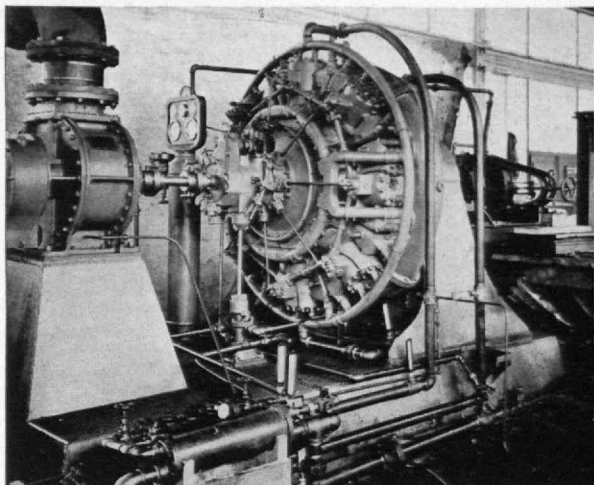
This is an extreme illustration of the fact that a utilitarian object, no matter how beautiful in pure line and form, must express its function besides conforming to an artistic standard. Had this article been what it professed to be, simply a graceful vase meant to hold flowers, then it would have remained a work of art in the mind of the lady. When it turned out to be a utilitarian object, meant for something entirely foreign to what its form implied, then it lost any aspect of artistic merit. It was neither one thing nor the other, hence nothing. Even from the point of view of the people of the country, it was nothing. Developed primarily as an object of daily use, the manufacturer had tried to embellish it with grace and

beauty, but in so doing had developed an awkward shape, unfitted for its purpose because of superfluity of ornament. His art went to dump heaps and secondhand stores instead of into the home, and he paid for his ignorance or disregard of the fact that function and form should be one.

Good design implies something deeper than straight adherence to function. It calls for a subconscious appreciation of the scientific problems and research which go into the construction of the object; it calls for an appearance suggesting the use of the article; and it calls for beauty. It follows, therefore, that a purely functional object may not necessarily be well designed. It *may* be, but is not *necessarily* so. An electric toaster with exposed heat coils, a switch, a few resistance wires to brown the bread, and the barely necessary supports for these would not be in good design and would probably not sell. A toaster with these functional elements, plus materials which denote permanence, formed to suggest stability, safety from burns and electric shock, and polished to reflect the pleasure of munching a nicely crisped piece of toast, is well designed and sells. If to this is added embossed roses or dust-collecting



Before After
What Mr. Teague did to a sales-slip register. The new design, aside from its æsthetic values, increased sales



A Radial Gas Engine. . . . Redesigned by Walter Dorwin Teague
Nooks, corners, gadgets, confusion *Smooth, clean, simple, satisfactory*

ornaments, then the whole effect is destroyed and the evaluating mind of the public refutes the product.

The theory that an object must imply its function if it is well designed may sound perfectly simple and obvious. It was not, however, until several centuries of development on the part of manufacturers and designers, prompted by education on the part of buyers, that we finally have been blessed with the capacity to recognize and accept this seemingly elementary theory. The German rose engine on page 367 is an elegant example of the desire which Eighteenth Century tool-makers possess to hide the supposedly vulgar form of a machine. To our modern way of thinking, this looks more like a sculptured bust of an Italian laborer eating a bowl of spaghetti than the simple lathe it should be. Fortunately, design improved and, during the Nineteenth Century, ornament became subjective to function, although manufacturers still found it difficult to condemn embellishment altogether. A few curves and a few moldings denote that tool makers still prided themselves on a little *savoir-faire* as far as aesthetics were concerned. The basic form was still something to be more or less ashamed of, and consequently was disguised to a moderate extent. We then come down to our modern practice—or at least what should be our modern practice but is not always so. The lathe at the bottom of page 367 has been designed with primary regard to function, economy, ease of operation, permanence, and all the qualities necessary to a well-designed machine. When we look at it, we can think of nothing but a lathe—and a good lathe at that. It doesn't suggest spaghetti, posies, chorus girls, or anything else but what it is, a lathe.

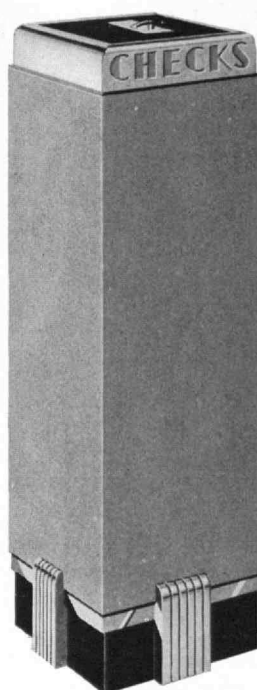
There is a danger of producing articles which are too functional. Many "modernistic" articles (our much admired chairs of iron pipe, for example) are all function and nothing else. A few months or years from now, they will seem as absurd as the old bust, rat, tandem, and snuff box, but without the associations these articles have, for they will not be exemplary of any period except an era in the regularly recurring bastard period.

There is a difference between forcing new designs on the public and leaving it to the public to demand them.

Some manufacturers, notably in the automotive field, have changed their designs periodically with the idea of making previous models obsolete. This, they believe, increases the sale of new models. A preferable method is to incorporate in the product the best of materials and workmanship for its particular function and price class. Then as new materials and methods are invented, or as the taste of the public changes, the older designs automatically become obsolete and there will be a genuinely healthy demand for new types. As there will always be improvements due to invention and research, and as the public taste is constantly changing, there should be no

fear that new designs will not be needed. The artificial method tends to weaken goodwill and create lack of confidence; the other method upholds the confidence of the public and helps to instill the belief that manufacturers are trying to make the best products possible.

A manufacturer who has spent years trying to perfect and increase sales of his pet product may find it difficult to believe that a designer can do in a few weeks what he has been trying to do for years. This requires an attitude of mind which it is not easy for the manufacturer to assume. He must be open minded and confident in the outcome if he is going to get the most design-ability for his money.



Walter Dorwin Teague
Designed five years ago, this check dispenser is still appropriate. Obsolescence should cause changes in design only when men, materials, or invention create opportunity for improvement

HOW does an industrial designer arrive at a good design? We can be sure that he does not create a satisfactory design by simply pasting on taste. After considerable experience, (Continued on page 382)

The 68th graduation exercises in Symphony Hall. Members of the Class of 1885 joined the officers of the Class of 1910, the Corporation, and the Faculty, in the academic procession and in the seating on the stage. See page 372



New Worlds to Conquer

President Compton's Address to the Sixty-Eighth Graduating Class

With a wise and understanding valediction, at once inspiring and challenging to graduates, President Compton each June concludes the Institute's Commencement Exercises. A reading below of his address to the graduating class last month will show why these valedictions — and salutations — are cherished by all Technology men who hear them. — THE EDITOR

SOME years before the War, the Berlin comic paper *Simplissimus* printed a cartoon showing the Kaiser in all his magnificence, with waxed mustache, boots, and saber, and beside him the Crown Prince, a puny, sad-looking, little boy, who was being examined by the court physician. "Your Majesty," said the doctor, "I grieve to say that, although your son may grow up, he may never be able to talk." "Oh, that will make no difference," said the Kaiser, "for by the time he grows up I will have said everything there is to say."

I wonder how many of you, in your youth, may have felt that you were born several generations too late for all the glorious adventure of the western pioneer, of the discoverer, and of the fortune seeker, which seemed to be a thing of the past. Except for a few spots on the earth, for the most part either very cold or very unhealthy, there seems to be little chance now to be a Francis Drake, a La Salle, a Father Marquette, or a Francis Parkman. This thought depressed me greatly when I was a boy.

As we grow up in our experience and judgment, we think less of physical and more of intellectual pursuits, and our interests turn to our profession and to our social environment. Perhaps there is a tendency in all collegiate education to create the impression that, in the intellectual field also, the pioneering work has been done. Such a feeling may arise because the college course is largely occupied in learning the principles of natural and social science that our predecessors have established, and in learning how to apply the techniques of their application to practical problems of engineering and business. All of this learning is valuable; the basic principles are a permanent guide to sound thinking, and the techniques are the best that we now know. But it is a calamity if our training and outlook stop here.

As my message to you, on this significant occasion, I want simply to raise the question: "Has everything been said that there is to say? Has the possibility of exploration and pioneering development been exhausted? Are your profession and the social world whose work you are entering static things? What will your work and opportunities be like five, 10, 25 years hence?" On the answers to such questions depends your best attitude for entering upon your life's work — that work for which your entire life, the prayers and sacrifices of your parents, the efforts of your teachers, and the help of many benefactors have been the preparation.

I do not believe that I shall be accused of claiming peculiar powers of prophecy when I assert that the answers to these questions are clear cut, for both logic and experience conspire to prove that we are entering an era of development unprecedented in its opportunities for new things, new methods, new relationships, and new problems demanding solution. If you doubt this statement, consider these factors: Some of you are going to be civil engineers. You have new materials to work with, improved kinds of concrete, structural steel,

and other building materials that were unknown a generation ago. Progress in their development has not stopped with this generation; it is advancing faster than ever. The fact that, within our time, the last geographical frontiers of the country have been occupied has created a new type of problem for you, the problem of the most advantageous utilization of our land. This calls for enormous development of irrigation, flood control, and soil conservation against erosion by wind and water. Our growing (*Continued on page 385*)

The Engineer and Social Problems

A Reading List Prepared by the M.I.T. Library

ANTHONY, A. B. Economic and social problems of the machine age. University of Southern California Press, 1930.

"Evaluates machine age products with unusual skill, precision, and balance." — Preface by E. S. Bogardus.

BEARD, C. A. and WILLIAM BEARD, '28. The American leviathan: the republic in the machine age. Macmillan, 1930.

"Contrasts the democracy of the country as conceived by its founders with the facts concerning its actual functioning today, revolutionized by machinery and modern science." — *Book Review Digest*.

BEARD, WILLIAM, '28. Government and technology. Macmillan, 1934.

"Lays emphasis on those aspects of government which particularly concern the engineer." — Preface.

BURRILL, G. A. An American engineer looks at Russia. Stratford, 1932.

"An evidently fair-minded account of industrial, agricultural, and educational conditions in Russia." — *Book Review Digest*.

CHASE, STUART, '10. The economy of abundance. Macmillan, 1934.

"Mr. Chase casts an inventory of our resources of energy, goods, and services, and shows the advance in well-being that might be attained if these resources were permitted to be used in our behalf, instead of being largely dissipated." — *Book Review Digest*.

— Men and machines. Macmillan, 1929.

"A philosophic discussion of the effect of machines upon modern life and civilization." — *Book Review Digest*.

FELS, S. S. This changing world, as I see its trend and purpose. Houghton, 1933.

"How to raise the level of living and enlarge its limits so that all can share in the fruits of science and art; and how to plan for this increase in purchasing power . . ." — *New York Times*.

FILENE, E. A. and C. W. WOOD. Successful living in this machine age. Simon and Schuster, 1933.

"He (Filene) comes as near to being the philosopher of our machine economy as we have yet produced." — Introduction by Glenn Frank.

FLANDERS, R. E. Taming our machines: the attainment of human values in a mechanized society. R. R. Smith, 1931.

"Chapters on the machine and present economic conditions by an American engineer and business man." — *Book Review Digest*.

FRANKL, P. T. Machine-made leisure. Harper, 1932.

"To defend the potentialities of the machine and to demonstrate the steps by which it may develop into a true instrument of creative expression." — The Author.

FREDERICK, J. G., editor. For and against technocracy. Business Bureau, 1933.

"Includes criticisms by Dr. Compton and other engineers, business men, and publicists." — *Book Review Digest*.

HENDERSON, Fred. The economic consequences of power production. John Day, 1933.

"Mr. Henderson's thesis is that the present economic system has been rendered obsolete and unworkable by the world's advance in productive power and by the changed technique of modern production." — *Book Review Digest*.

HUXLEY, JULIAN. Science and social needs. Harper, 1935.

Report of a tour of research laboratories in Great Britain, made to ascertain the influence of scientific discovery on modern life.

JACKSON, D. C., Staff. Machinery and unemployment. (In Roos, C. F., editor. The stabilization of employment; papers presented at the Atlantic City meeting of the American Association for the Advancement of Science. pp. 33-51.) Principia Press, 1933.

JEROME, HARRY. Mechanization in industry. National Bureau of Economic Research, 1934.

"Provides an analysis and appraisal of a phenomenon which every engineer knows in its details, but which few engineers have occasion to view in full perspective." — B. A. Thresher, '20.

LANDIS, W. S. An engineer looks at inflation; its effects in Germany and France. Duke Endowment, 1934.

Address given before the employees and guests of the American Cyanamid Company, November 13, 1933, by the Vice-President of the company.

LEONARD, J. N. Tools of tomorrow. Viking Press, 1935.

"An account of the things known to science today that may change our tomorrows. A philosophical approach to the problems of the machine age." — Publisher's statement.

LOEB, HAROLD and associates.

A summary and interpretation of the findings of the National Survey of Potential Product Capacity, established by the Federal Government in 1934 and made up of engineers and economists.

MAYO, ELTON. Human problems of an industrial civilization. Macmillan, 1934.

"Deals with the effects which modern industrial methods are having upon social organization and social order." — *Book Review Digest*.

MONKHOUSE, ALLAN. Moscow, 1911-1933. Little, 1934.

"Author was one of the group of British engineers accused of espionage and sabotage and tried at Moscow in 1933." — *Book Review Digest*.

MUMFORD, LEWIS. Technics and civilization. Harcourt, 1934.

"The most lucid and persuasive exposition of the promise of technics in human terms that it has been my good fortune to read." — Stuart Chase, '10.

POLAKOV, W. N. The power age; its quest and challenge. Covici, Friede, 1933.

"Forms a most useful guide for the layman on the actual practice and the potential achievement of the new technology." — Lewis Mumford.

RUKEYSER, W. A. Working for the soviets: an American engineer in Russia. Covici, Friede, 1932.

"Author served as adviser to the Asbestos Trust of the Soviet Government at two periods during 1929 and 1930." — *Book Review Digest*.

SWOPE, GERARD, '95. The Swope plan (for stabilizing industry), details, criticisms, analysis: edited by J. G. Frederick. Business Bureau, 1931.

TAYLOR, M. P. Common sense about machines and unemployment. Winston, 1933.

"To determine why we have failed to use machinery properly, and to consider the control necessary to make machinery serve the needs of society." — Preface.

VEBLEN, T. B. Engineers and the price system. Viking Press, 1933.

"Fourteen years after its first publication, this little volume of essays has risen to fame because they contain 'the original gospel from which the theories of technocracy have been developed'." — *Current History*.

Note. A printed list of books published by Alumni during the past five years can be obtained from the M.I.T. Library for the asking.

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Five Years

WHILE it was not marked by any formal ceremony on June 6, the fifth anniversary of Dr. Compton's Presidency of Technology did not go uncelebrated. Quietly, in the hearts and minds of the students, staff, and Alumni who have worked with him, there was recognition and celebration — recognition of his achievements as a man and an administrator and celebration of Technology's good fortune in having him at its head during these years of readjustment and careful walking forward.

We reprint on the opposite page a gracious and knowing editorial from the Boston *Evening Transcript* bearing tribute to the courage and faith of our President and his co-administrator, Dean Bush. As the voice of Technology Alumni, 30,000 strong, The Review adds another salute to our two leaders and assures President Compton of our pride in his first lustrum and our confidence and faith in him as he enters his second.

Rondo on Reunions

WE doff our editorial bowlers to Alumni President Charles H. Smith, '00, and reunion chairman Hamilton L. Wood, '17, for contriving an Alumni Day so successful that it established itself immediately as an event worthy of annual repetition. It was not a reunion on the Litchfieldian scale described by Professor Rogers on page 377; in the last 15 years, Alumni have lost their taste, as the reunions of 1925 and 1930 demonstrated, for the Roman holidays of 1916 and 1920. Alumni Day, 1935, was more intimate and therefore more friendly; it was less strenuous and expensive and therefore more practical.

Aside from the Electrical Engineering Semi-Centennial celebration, at once an impressive tribute to Professor Dugald C. Jackson and a fitting recognition of a great department, two events of Alumni Day particularly impressed us. One was President Compton's luncheon to Honorary Secretaries and to Presidents and Secretaries of Alumni Clubs, and the other, the Dinner-Concert at Symphony Hall. The luncheon brought together men from many cities in the East and from as far away as Colorado and Montana, men who are doing vital work for the Institute. The Honorary Secretaries are making themselves indispensable in the discovery and selection of good students and, as their discussion at this luncheon proved, they are doing it with an enthusiasm and effectiveness that admirably supplements the growing activity of the club officers. For example, Harold O. Bosworth, '02, armed with our movies has carried the Technology gospel all over Colorado, and A. Warren Norton, '21, of the New York Club, has operated a placement bureau that has found jobs for 200 Technology Alumni. There were other equally im-

pressive reports of activities at the luncheon, but these two are typical of what our alumni officers are doing.

The dinner and Pops concert, well organized as they were, provided an ideal event. With over 600 Alumni dining on the floor and an equal number of friends and students in the balconies for the after-dinner program, the hall was comfortably filled. The old-type quinquennial reunion brought back from one to two thousand Alumni. If Alumni Day, each year, draws the 700 or so Alumni that it did in June, over a period of five years we will greatly exceed the numbers drawn by the old plan. It is quite possible that, as the idea of Alumni Day becomes more familiar, we will draw a still larger attendance.

Successful as it was, the reunion on June 3 revealed a number of deficiencies which future committees must study to avoid: there were inadequate provisions for women guests; Alumni not caring to join the departmental seminars lacked a focus for their activities during the day; it was not possible with the budget afforded by the five-dollar charge to publicize the reunion as extensively as in the past; and a deficit, small, to be sure, but assuming greater importance as of possible annual recurrence, resulted despite careful planning.

With the experience of this first Alumni Day to build upon, future reunion committees can most certainly readapt the plan to obviate these difficulties. They must, because Alumni Day is too vital to Technology and its Alumni to be dropped.

Graduation

SIXTY-EIGHT years ago 14 students received degrees (all Bachelor's) from the Institute at its first graduation. This year, on June 4, President Compton awarded 560 diplomas, including 380 Bachelor's degrees and 180 advanced degrees (Ph.D., 25; Sc.D., 11; S.M., 142; Certificate in Public Health, 2).

Since a large percentage of the graduates have already accepted positions and others have better prospects than at any time since 1929, an optimism prevailed at this Commencement which revived memories of graduations several years ago. Behind this optimism lay the fact that nearly all the men have secured positions of the type they desired in fields for which they were trained.

The academic procession of the guests of honor, the Corporation, members of the Class of 1885, the 50-year class, officers of the Class of 1910, and the Faculty was led by Chief Marshal Alexander Macomber, '07, long prominent in Technology graduations. Following the Chief Marshal came President Karl T. Compton with Governor James M. Curley. Dr. Isaiah Bowman, President-elect of Johns Hopkins University, the commencement speaker, followed with Dr. Vannevar Bush, '16, Vice-President of the Institute, as his escort.

BETTER DAYS FOR SCIENTISTS

(From the Boston Evening Transcript of June 4)

THERE is a portent of much good in the buoyant tone, the returning spirit of optimism, which marked this Commencement Day at the Massachusetts Institute of Technology. Depression, beyond doubt, is in part a mental state. As such, it comes to an end when new faith grips the soul.

The five years of President Compton's leadership have called for hard, uphill work, a feat almost of mountain climbing, but the chief has never faltered. From 1920 to 1930 the demand for well-trained technologists and scientific workers in American industry had been so great that it seemed insatiable. The taking of a Tech degree was tantamount to the offer of a job. Then, suddenly, the demand fell far toward zero. It became even more difficult for men of scientific training to secure employment than for the graduates of other colleges, and everyone knows the finding of jobs was a heart-wracking task even for them. Now the picture has changed. At today's Commencement, speakers say that most of the graduating class have offers of employment, some in excellent posts.

While this betterment results from basic economic and social forces beyond the control of any one man or group of men, nevertheless Technology's strength today, and the assured optimism of her spirit, are due in great part to the faith preserved through the difficult years by President Compton and Vice-President Bush. Even though a large section of public opinion, which formerly

had only praise for the marvels of applied science, suddenly turned about and roundly condemned technological development as though science were the cause of our troubles, President Compton never relinquished courage. He openly preached the doctrine that science, moving ever forward, would be found to serve society's best interest, and he did so even in hostile quarters and against every criticism. As chairman of the national Science Advisory Board, engaged in improving the social value and usefulness of the Federal Government's many scientific bureaus, he has exerted a powerful influence. In that rôle Dr. Isaiah Bowman, the President-elect of Johns Hopkins, spoke today of the "unfailing generosity and gallantry and the breadth of conception of citizenship" that have characterized his work.

Again, the decision of a notable group of the nation's leading industrialists to form a new research board, announced last night, gives impressive concrete evidence of the determination of men of science to carry on. The Research Associates, as they are called, will pass expert judgment on the further projects of investigation and invention which are most worthy, and then will see to it that the money is forthcoming to make such work possible. In a nation which had come to feel quite depressed about science, such returning buoyancy, marked by definite plans for still greater progress, is significant and encouraging.

The Reverend Abbot Peterson, pastor of the First Church of Brookline, who gave the invocation, was escorted by Professor George W. Swett, '03, Secretary of the Faculty. Professor James R. Jack, Head of the Department of Naval Architecture, marched with Admiral C. P. Snyder, commandant of the First Naval District, who represented the United States Navy. The representative of the Army, General W. H. Tschapat, chief of ordnance, had as his escort Colonel Samuel C. Vestal, Head of the Department of Military Science.

Mayor Richard M. Russell of Cambridge was escorted by Dean William Emerson of the School of Architecture, while Dean Harry M. Goodwin, '90, of the Graduate School, marched with Mayor Frederick W. Mansfield of Boston. Dean Harold E. Löbdell, '17, escorted Charles E. Smith, '00, President of the Alumni Association, and Professor Henry E. Rossell, '15, of the Department of Naval Architecture, escorted Commander Edmund R. Norton, '13, of the Construction Corps, and aide to Admiral Snyder. They were followed by Professor Dugald C. Jackson, Head of the Department of Electrical Engineering, and Professor Frederick H. Bailey, of the Department of Mathematics, both of whom retired this year after long service on the Faculty. Registrar Joseph C. MacKinnon and Professor Ralph G. Hudson, '07, chairman of the Committee on Graduation Exercises and Senior Week, marched together, followed by Major J. F. Timilty and Adjutant General W. I. Rose, military aides on the staff of Governor Curley.

Then came the members of the Corporation with Walter Humphreys, '97, Secretary, as their marshal. Among those in the Corporation division were: John E. Aldred, Albert F. Bemis, '93, Godfrey L. Cabot, '81, Harry J. Carlson, '92, Louis S. Cates, '02, Francis J. Chesterman, '05, Thomas C. Desmond, '09, Bradley Dewey, '09, Horace S. Ford, Willis F. Harrington, '05, William R. Hedge, '96, Franklin W. Hobbs, '89, Frank B. Jewett, '03, William R. Kales, '92, Arthur D. Little, '85, Alfred L. Loomis, Henry A. Morss, '93, Franklin A. Park, '95, Redfield Proctor, '02, Harold B. Richmond, '14, Donald G. Robbins, '07, Harlow Shapley, Charles A. Stone, '88, and Henry E. Worcester, '97.

Members of the Class of 1885, the men who were graduated from the Institute half a century ago, followed with their marshal, Dr. Samuel C. Prescott, '94, Dean of Science. Members of the Class who attended were: David Baker, Philadelphia, Pa.; Fred E. Bedlow, Melrose; Charles A. Brown, Salem; Parker C. Choate, Essex; Edward H. Dewson, Davenport, Fla.; Arthur H. Doane, Middleboro; Redington Fiske, Boston; Alfred C. Fuller, Belmont; S. Cuyler Greene, Detroit, Mich.; Arthur K. Hunt, Brookline; Dr. Mary E. Jones, Boston; Isaac W. Litchfield, Quincy; Arthur D. Little, Cambridge; George H. Nye, New Bedford; Winthrop Packard, Canton; Sidney A. Parsons, Manchester; Herbert G. Pratt, Boston; Edward L. Rawson, Newtonville; Charles R. Richards, Pelham, N. Y.; Frank E. Sands, Cambridge; Lyman Sise, West Medford; George

F. Steele, Brookline; Miriam F. Witherspoon, Worcester; and Erastus Worthington, Dedham. With this group marched Herbert S. Cleverdon, Boston, and Dudley Clapp, of Cambridge, President and Secretary, respectively, of the Class of 1910, which as the 25-year class was thus represented in the academic procession.

The last division of the procession was composed of more than a hundred members of the Faculty under the leadership of Professor George E. Russell, '00.

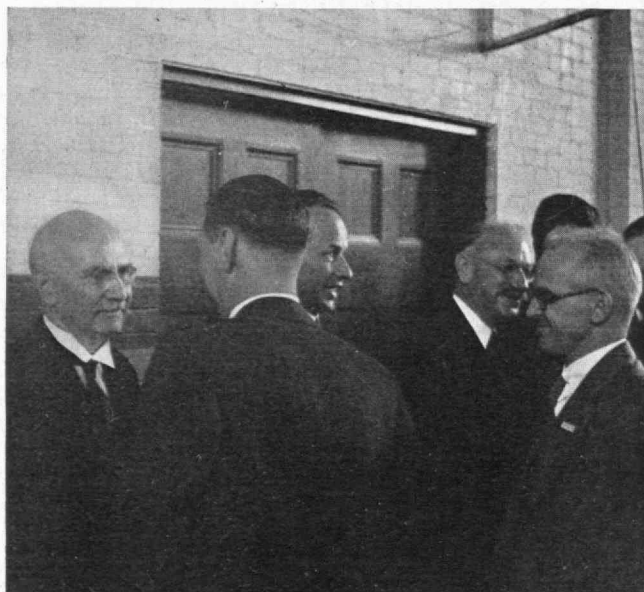
At the head of the long procession of candidates for degrees was Walter H. Stockmayer of Rutherford, N. J., President of the Class of 1935. With him were the class marshals, Hal L. Bemis of Saint Davids, Pa., Henry Fiske King of Arlington, Mass., and Donald C. Gutleben of Philadelphia. Their faculty marshal was Professor Jesse J. Eames, '02.

Chief Marshal Macomber made the traditional announcement opening the graduation exercises. The

Reverend Peterson then made the invocation, after which Dr. Compton introduced the commencement speaker, Dr. Bowman. Administration of the oath of office to 127 officers in the Reserve Corps followed the commencement address, and General Tschappat made a brief address to this group, to which he presented commissions. Admiral Snyder made the address to the ten naval constructors.

After the presentation of degrees, Dr. Compton announced the various scholastic honors and prizes and made his address to the graduating class. (See page 370.)

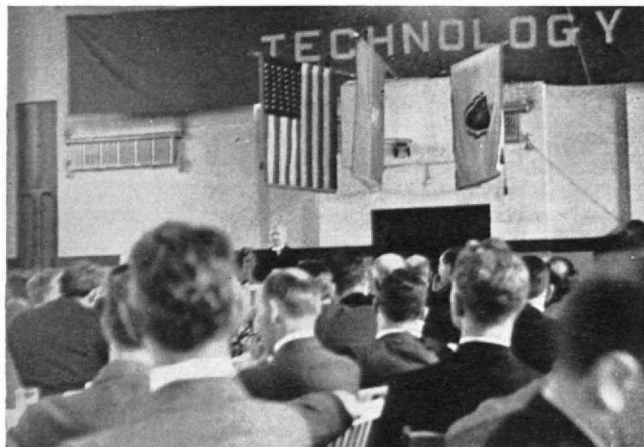
Following the commencement exercises, Dr. and Mrs. Compton gave a luncheon at their home on Charles River Road for members of the Class of 1885, and in the afternoon a reception in Walker Memorial to the graduates and their friends, alumni, and members of the Faculty. The Senior Prom in the evening concluded the Senior Week program.



Harold E. Edgerton, '27

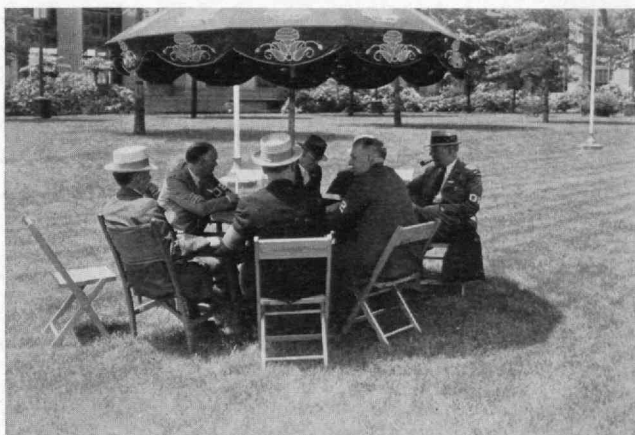
Hail and Farewell to Professor D. C. Jackson

Professor Edgerton, famous for his high-speed pictures, shows his facility with the candid camera at the testimonial luncheon to Professor Jackson on Alumni Day. Above, left: The retiring Head of the Department of Electrical Engineering at his desk. Above, right: Professor Jackson, Edward L. Moreland, '07, new Head of the Department, and Professor Emeritus Frank A. Laws '89, (with their backs to the wall), head the receiving line at the luncheon. Below, left: Professor Jackson speaking. Below, right: Herbert G. Pratt, '85, President, Samson Cordage Works, who spoke, is at the extreme left talking with Gerard Swope, '95, President, General Electric Company, who also spoke. In the center cluster are two of the other speakers, Charles A. Stone, '88 (facing right), Chairman of the Board, Stone and Webster, Inc., and Walter S. Rodman, '09 (facing left), Dean of Engineering, University of Virginia. At the extreme right is Alexander Macomber, '07, Consulting Engineer, who presided. There were 229 at the luncheon





Above: Alumni Tent in Eastman Court where Alumni registered and forgathered in sociable groups. Below: Members of the Class of 1902 renew old friendships



Prelude to Bombardment

IMPORTANT advances in the development of electrostatic generators and the application of high-voltage, direct current electricity at the Institute were announced by President Compton at a recent meeting of the board of directors of the Research Corporation in New York.

The giant electrostatic generator built at Technology's research station on the estate of Colonel E. H. R. Green at Round Hill, Mass., by Dr. Robert J. Van de Graaff and his associates, Drs. Lester and Chester Van Atta, has been equipped with accurate voltage and current controls, as well as vibration eliminators. It is now ready for the big vacuum discharge tube, in which experiments in atomic disintegration are expected to begin this year. The generator now develops approximately 7,000,000 volts, one of the limitations on higher voltage being flash-over to the roof of the airship dock in which it stands. This limitation may be reduced by corona shielding of the girders. The present voltage is many times greater than any other source of steady direct current, and is entirely adequate for the contemplated experiments on nuclear bombardment.

During the past year the Round Hill research staff has been engaged principally on the design and construction of the huge vacuum discharge tube now being prepared for operation by the generator. Much of the



M.I.T. Photos

Alumni Day Scenes

Above: Inside the tent as Alumni registered. Below: One-hundred-year contrast in transportation. The New Haven's streamline Comet and an old coach (1834)



progress of the past year has been made possible by grants from the Research Corporation, Dr. Compton stated.

The design of the vacuum discharge tube to handle large currents at several million volts is a scientific and engineering problem comparable to the design of the generator. The tube will consist of five identical units, joined end to end and sealed to metal caps at the two extremities. One end will contain the source of electrified particles, and the other the target to be bombarded by them. These end pieces and one unit of the tube have been constructed and are now undergoing tests which are proceeding satisfactorily.

The tube itself is a hollow textolite cylinder one foot in diameter, connected for very rapid pumping out of air and vapors. It is provided internally with a series of specially designed metal shields which will hold the beam of electrified particles accurately in focus and distribute the voltage along the tube in the most advantageous manner. This voltage distribution is maintained by electric leakage through specially designed resistors running down the inside of the tube connecting the metal shields in series. Many months of experimentation were required to develop resistors capable of transmitting the requisite amount of current at the enormously high voltages and at the same time maintaining approximately constant resistance. With this problem solved the huge project moves rapidly to completion.

During the coming year this vacuum tube unit will be employed in a series of experiments on nuclear disintegration in the lower voltage range, while the other additional units of the tube, which will permit extension of the experiments to higher voltage ranges, are under construction. Dr. Compton reported that this work had proceeded in accordance with the expected schedule.

In the Institute's laboratories in Cambridge, under the supervision of Professor Van de Graaff and Dr. John G. Trump, '33, attention has been concentrated on the ability of a vacuum to sustain high voltages. This ability is limited by two factors. One is the pulling of electrons out of the negative terminal, which has been known and investigated by previous workers. The second is the ionization of the metal surfaces of the positive and negative electrodes under the influence of ionic bombardment, the effect of which was discovered and studied in the course of the present investigations. Ways have been devised for reducing these two phenomena and thereby increasing the voltage which can be maintained by the electrodes in a vacuum.

An important result of these investigations has been the construction and preliminary test of apparatus for generating very penetrating x-rays, which possesses several advantages as compared with machines hitherto available. The penetrating x-rays have their practical application in the treatment of internal cancer. The present apparatus consists of a Van de Graaff belt generator, coupled with a modified Lauritsen x-ray tube, in which all aspects of the equipment have been satisfactorily tested for production of x-rays up to 700,000 volts. The advantages of the new equipment over previous x-ray outfits of similar voltage are: first, cheapness and simplicity of construction; second, ease and accuracy of voltage and current control; third, and most important, the entire current at the maximum voltage is used to produce x-rays, whereas most previous high-voltage x-ray outfits emit a heterogeneous mixture of x-rays, characteristic of voltages ranging between zero and the maximum. Designs have already been made for an actual hospital installation of this equipment.

The Research Associates of M.I.T.

FORMATION of the Research Associates of the Massachusetts Institute of Technology, a group of leaders and organizations in business and industry who will contribute to the financial support of important research, was announced by President Compton at the reunion dinner on June 3.

The new organization, which has a founder membership of 24, was created in recognition of the threefold value of research in stimulating leadership among members of the Faculty; as a method of teaching students to apply their resources of knowledge, and in developing new discoveries with far-reaching benefits to society in matters of industry, health, and safety, in standards of living and intellectual satisfaction.

"Research," Dr. Compton said in announcing the plan, "is one of the most powerful methods of teaching. Its importance, as estimated by the public as well as in educational circles, has increased rapidly in recent years. Therefore, it behooves the Institute to continue to

develop this activity along sound lines so that our research will be well coördinated with the teaching program and highly productive in results of scientific and practical value."

Formation of the Research Associates marks the beginning of the second phase of a successful experiment which began six years ago when the Rockefeller Foundation made a substantial grant to permit the Institute to demonstrate the value of an active program of research in the basic sciences of biology, chemistry, geology, and physics.

The founder members of the Research Associates, which will operate under the chairmanship of Charles Hayden, '90, of New York, are: A. Farwell Bemis, '93, President, Bemis Industries, Inc.; Godfrey L. Cabot, '81, President, G. L. Cabot, Inc.; William W. Buffum, Secretary and Treasurer, Chemical Foundation; Francis P. Garvan, President, Chemical Foundation; Dewey and Almy, President, Bradley Dewey, '09; Irénée du Pont, '97, Vice-Chairman of the Board of Directors, E. I. du Pont de Nemours and Company; Lammot du Pont, '01, President, E. I. du Pont de Nemours and Company; Francis W. Fabyan, '93, of Bliss, Fabyan and Company; Charles Hayden, '90, Senior Partner, Hayden, Stone and Company; Frank B. Jewett, '03, President, Bell Telephone Laboratories; John R. Macomber, '97, President, First Boston Corporation; James F. McElwain, '97, President, J. F. McElwain Company; Mrs. Forris Jewett Moore, widow of the late Professor Moore, for many years a distinguished member of the Faculty in the Department of Chemistry; Henry A. Morss, '93, President, Simplex Wire and Cable Company; Charles Neave, '90, Fish, Richardson and Neave; Franklin A. Park, '95, Vice-President, Singer Sewing Machine Company; Redfield Proctor, '02, President, Vermont Marble Company; Research Corporation, President, Howard A. Poillon; Alfred P. Sloan, '95, President, General Motors Corporation; Charles A. Stone, '88, Chairman of the Board, Stone and Webster, Inc.; Gerard Swope, '95, President, General Electric Company; Thomas J. Watson, President, International Business Machines Corporation; Edwin S. Webster, '88, Vice-Chairman of the Board, Stone and Webster, Inc.; and A.H. Wiggin, former President, Chase National Bank.

Anniversary

FIFTEEN years ago last month the *Tech Engineering News* made its *début*, was entered as second-class matter at the Boston Post Office. Few days before its 15th birthday, *T.E.N.* was acclaimed by the *Yale Scientific Magazine* as decidedly first-class matter, received (for the second successive year) the annual Yale Cup for the best science publication by undergraduates.

Bases for the award were the scientific merit of articles, proportion of advertising to reading matter, extent and distribution of circulation, cover designs, pictorial supplements, and general make-up.

No small credit for the excellence of Volume XV is due General Manager Henry J. Ogorzaly, of Yonkers, N. Y.; Editor-in-Chief Zay B. Curtis, Jr., Pelham, N. Y., and Business Manager James D. Parker, Swampscott, Mass., all members of the Class of 1935.

Masters of City Planning

A MAJOR advance in the Institute's program of city planning studies will take effect next autumn with the introduction of graduate courses leading to the degree of master in city planning. Recognizing the fact that all planning problems depend for their best solution on the coördination of several fields, the new graduate curriculum will blend basic studies in engineering and architecture with elements of economics, sociology, and government.

The new course is a furtherance of the present five-year curriculum leading to the degree of Bachelor of Architecture in city planning, which was created by the School of Architecture three years ago. The entire city planning program, both graduate and undergraduate, will be under the direction of Professor Frederick J. Adams.

A series of lectures by experts in the professional fields of city planning and housing will form an outstanding feature of the course. In addition to advanced studies in city planning research and design, the curriculum offers courses in planning and housing legislation

and in city planning administration. These deal with past and present legislation, the powers and duties of local authorities, and other aspects of planning, such as zoning laws, building codes, and private deed restrictions. The administration course covers the organization and administration of planning projects in state, county, or region, as well as methods of securing appropriations for their preparation and development.

Summer Rainbows

TECHNOLOGY'S third international conference on spectroscopy will open at the Institute on July 15, bringing to Cambridge leading physicists, biologists, physicians, and research experts from many parts of this country and abroad.

Spectroscopy, one of the most powerful methods of research known to modern science, is the investigation of matter by studying the light given off when electrons are hurled into the atoms which compose it. Its applications include such diverse fields as medicine, astronomy, metallurgy, biology, physics, and chemistry, and its use in all these fields will be discussed during the coming

ALUMNI DAY, JUNE 3

(From "This Is Life" by Professor Robert E. Rogers in the Boston EVENING AMERICAN, June 4)

WE HAD a nice time at Technology yesterday. A fine warm, breezy, sunny day in the grounds overlooking the blue Charles saw a representative body of alumni come home to look the old place over and participate in the seniors' Class Day along with other planned exercises of the day.

Yesterday the Institute celebrated the 50th anniversary of the granting of the first degree in electrical engineering in America. It also said farewell to Professor Dugald C. Jackson, for many years head of that department and now retiring, with leisure to devote that extraordinarily active and inventive and interested mind of his to problems no longer to be bounded by a departmental horizon.

In addition, there was held an Alumni Institute of Professional and Industrial Progress, with round-table discussions on many themes. All this is very different, of course, from the old alumni circuses which were held once every five years for several days and left everybody plumb worn out. Yesterday's celebration was briefer and more businesslike, more serious, and, it is to be hoped, more useful. Dinner at Symphony Hall and a Pop concert ended the day pleasantly.

I am immensely pleased to see Technology trying out tentatively a custom which is one of the bulwarks of Harvard's strength. The memory of man runneth not to the contrary of that custom by which the graduates, from the oldest living to the youngest beginning to live, have gathered in the Yard on Commencement Day, with all females properly excluded, to partake of the classic spread, to march about the Yard in order of classes, marshaled by the 25th class in toppers and tails, on their way to hear the speakers of the afternoon.

Here is a custom which bridges the years for many, many generations. Year after year many men come back to meet the men of their own and other classes. As a cement to the Harvard spirit I can think of nothing more useful. May I hope that this new experiment at Technology may have the same effect in the long run and that her graduates may come back as a matter of habit and ceremony for many years to come.

Those who participated in the old five-year jamborees will miss them, no doubt. In 1910, 1916, and 1925 we enjoyed them.

In three of them, at least, the presiding genius was Isaac (Ike) Litchfield of the Class of 1885. Remembering the somewhat grim and routine Technology of his youth, with the boys living lonesome lives in lodging-house rooms scattered over Boston, the few holidays, the few students' extra-curricular activities, he bent his highly inventive talents to seeing to it that when the boys came back to M.I.T. for their reunions they should play as they had never played before.

He wanted Tech to be a place — paraphrasing President Walker's remarks, with reverse English — not merely where men should work, but where boys should play. And the growth of student activities since we moved across the river has been due in considerable part to Ike Litchfield, '85.

It is very easy for traditions to die at a school or college. Technology is merely a sample of a general proposition which every college man will recognize. A mere matter of four years of neglect or indifference among the undergraduate body will kill customs and traditions that have lived for many years and acquired genuine significance. But once dead, they are desperately hard to revive. Here is where the graduates can do most useful work. They watch the youngsters from year to year, instruct them in the ways of the past, urge upon them their continuance, at the same time welcoming the innovations of the younger classes.

That is why alumni days are really important in a college. They mean something more than dressing up in white flannels and striped blazers, in masquerading as pirates or convicts or sailors or Buster Browns, escorting donkeys, elephants, or wagons loaded with beer kegs. That is good fun, but unless certain of the realities of the past are handed on they will soon die out. That is why Harvard's unvarying Commencement Day program and its unvarying Class Day program, handed on down the years, for more than I can count, are psychologically of the greatest importance.

"Fair Harvard, thy sons to thy jubilee throng" may be matched now by "I wish that I were back again at the Tech on Boylston Street — with a stein on the table and a good song ringing clear." — Copyrighted by Boston *Evening American*.



J. M. Nalle, '20

A study in faces. President Compton with his son, Arthur, watch the operation of a model locomotive at Technology's Open House, May 4

conference. Professor George R. Harrison, Director of the Institute's Spectroscopy Laboratory, will preside at the meetings, which will be held in the George Eastman Research Laboratories from July 15 to 20.

In medical research, the spectroscope has already yielded important knowledge concerning the effects of radiation on the body cells, and has opened a new approach to the study of many diseases. It has made possible the detection of minute traces of metallic poisons, including lead and silver, in the human system long before they reach a dangerous stage. In astronomy, the instrument has enabled scientists to determine the composition of the stars from an analysis of the light they emit. The method also has important applications in industry and engineering.

Special emphasis will be given at the forthcoming conference to the biological applications of spectroscopy, the spectroscopic analysis of materials, and photographic photometry. A new feature will be a series of meetings, sponsored jointly by Technology and the Harvard Observatory, on astronomical spectroscopy.

A number of conference visitors are expected to remain at the Institute to attend one or more of the summer courses in spectroscopy, or to carry on individual research in the laboratories. Instruction will be given in radiation measurements, quantitative spectroscopic analysis, and practical and applied spectroscopy.

Coöperative Course

A NEW five-year coöperative Course in Mechanical Engineering, designed to give students an insight into the technical and executive aspects of industrial manufacture, and leading to the degree of Master of Science, opened at the Institute last month.

Under the coöperative plan, which is similar to that successfully operated for several years past by the Department of Electrical Engineering, students will carry on practical work in the plants of the General Electric Company in conjunction with their studies at the Institute.

The industrial work has been carefully planned with a view to its educational value, and at all times will be closely correlated with instruction at Technology. The content of the first four years of the course is essentially the same as that given in the present course in mechanical engineering, there being no omissions in the fundamental and professional subjects. Those subjects omitted from the regular course curriculum have their counterparts in the program at the works.

The last year of graduate study and research will be planned for each student in accordance with the requirements of the graduate school. During the final term, students may be assigned to the company's research departments for special work designed to develop individual aptitudes.

Students will be chosen for the new option on the basis of aptitude and scholastic records after two years of study in the regular mechanical engineering course. The subsequent three years, including summers, will be spent either at Technology or at the industrial plants.

Alfred E. Burton, 1857-1935

IN RECORDING, with profound sorrow, the death of the Institute's first Dean, Alfred E. Burton, on May 11, we inevitably recall the spontaneous tributes prompted by his retirement from the Institute staff in 1921. Among these was one by Professor Robert E. Rogers, published in the July, 1921, Review which deserves excerpting now because it so charmingly and adequately portrays the qualities of one of the great men in Technology's history.

"And, withal, our Dean never lost his dignity, he was never razed in an unkindly spirit, he never condescended, was never aloof, or petulant; it never seemed an effort, though often it must have been, to be so continually with the men; to understand them, to separate the essential from the inessential, to praise or reprove the essential and let the inessential go as of no importance. It never seemed an effort, as it surely must have been, in the days before the medical service was instituted, to keep track of the boys who were sick and lonely, to get doctors for them and visit them, at how great a sacrifice of time and strength nobody knows, to find the boys who were badly lodged or in the wrong neighborhoods or the wrong company, to keep track of the foreign boys, who so often were entirely on their own responsibility in a strange city, and to try to give them something of our American home life and companionship. It never seemed a task to this man of splendid strength, who wore his years so lightly, who kept his temper and his courage and his enthusiasm, and, above all, his humor, so unquenchably alive.

"He was to be seen at his best at the Walker Club, which was perhaps his favorite among Technology societies, for it grew from the personality of General Walker, whom he wished always to keep alive in the

imagination of those who never knew him. It was the Dean who kept the Walker Club alive, after all, and his oft-repeated story of its founding and the tradition it implied, of comradeship between student and instructor, of an interest in the things of the spirit and of the arts, was of prime importance in maintaining that tradition. And the last meeting, in the dusking spring woodlands, where, after a camping supper in the firelight, the boys, quite in the spirit of his own *Commedia del Arte*, burlesqued his past adventures, with Peary in the North, in Sumatra taking the eclipse of the sun, and then after listening to one of his clear-cut characteristic little speeches, toasted him and sang to him — that last meeting will not be soon forgotten by those who were fortunate enough to participate in it.

"It was only one of dozens of such farewell meetings. I suppose every organization in the Institute gave him a send-off. He called them his obituaries and vowed that he was fortunate in hearing them while he could enjoy them. And he was. For no man ever heard more good spoken of him, more good will and friendliness expressed than did the Dean from these boys who looked on him not so much as an officer of the Faculty retiring, as a well-understood, well-beloved, infinitely companionable elder brother — setting out on new adventures.

"And the responses he made! I heard several — at the Walker Club at the freshman dinner, at the senior dinner, at the inaugural banquet — and I could not help but notice their freshness, their variety, their clearness and spontaneity, and above all, their never failing cogency and wisdom. He had been making them steadily for two months, I suppose. For that matter, he had been making them steadily for 20 years — and the spring had never run dry. His voice still lifted quietly, but clearly and compellingly, saying the things men need to have said to them and wish to have said to them. He said things this generation will remember as he remembered the sayings of Rogers and Walker.

"... He was an artist. He was an artist using the tools of science, and later, the tools of human relationships. He loved to create in art; he loved the masquerades and merrymakings at his home, his little marionette theater he spent so much care and pains upon; he loved,

apparently, to dress up and see others play a part; he loved to see people come out of their shells and create, for their own pleasure and happiness. He loved to create, but better he loved to encourage others to create. And in that he was the finest artist of all. Lots of people can teach science and engineering and things; lots of people can be good administrators and efficient deans. But the man who is an artist in an inartistic job is one in a million. And that is Dean Burton. . . a creative artist in teaching men how to live."

Tau Beta Pi Fellows

OF SIX students recently awarded graduate fellowships by Tau Beta Pi, national honorary engineering society, four have elected to carry on their advanced studies at Technology next year.

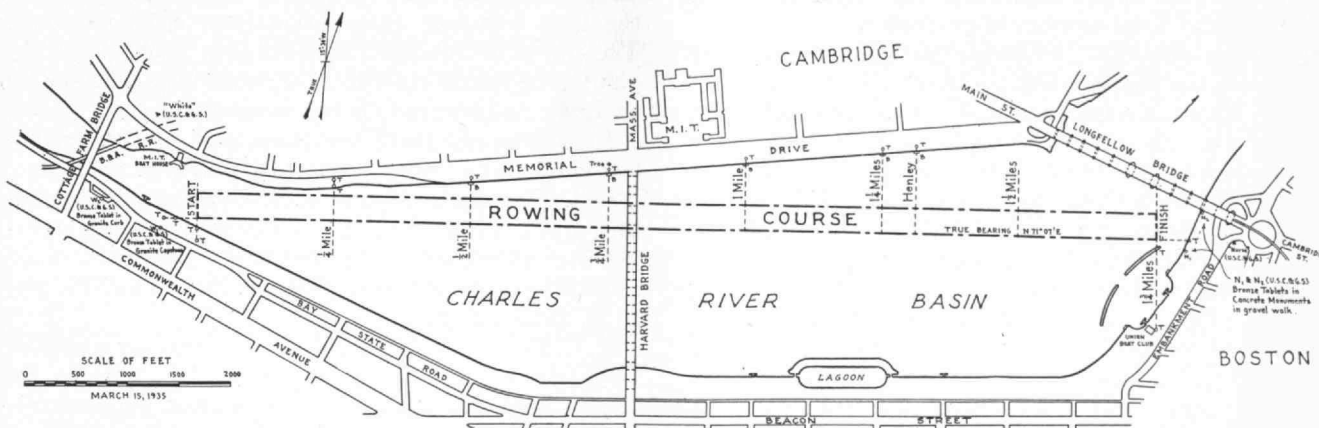
They are Henry J. Ogorzaly, of Yonkers, N. Y., a member of the Class of 1935 at the Institute; Charles E. Crede, of Wilkinsburg, Pa., a member of this year's graduating class at Carnegie Institute of Technology; Frederic A. L. Holloway, of Atlanta, Ga., Georgia School of Technology, and Dale Pollack, of New York City, Columbia University. The fellows were chosen from a group of 105 applicants from all parts of the country.

In coöperation with the educational aims of Tau Beta Pi, the Executive Committee of M.I.T. has voted to grant to these students additional awards of graduate scholarships covering their full tuition for the coming year.

Fourteen of the 41 fellows who have been appointed since Tau Beta Pi established its fellowships in 1929 have chosen to carry on their graduate work at Technology.

Record Council Year

MEETING for the 181st time on May 27, the Alumni Council, with 66 present, brought its total attendance for the fiscal year to a high of 610 — 39 more than its previous record — "a most fitting



New rowing course on the Charles, surveyed, laid out, and marked by members of the Department of Civil Engineering under the direction of Professor John B. Babcock, '10. Probably no rowing course has ever been established with such accuracy. Professor Babcock tied it in with precise triangulation measurements of the Coast and Geodetic Survey and made the first precise survey of the whole Basin, which will be useful for many other purposes. Distances on the course are marked by specially designed targets surmounting iron posts eight feet high, fixed in permanent concrete foundations. The course accommodates five crews

finale to the fine program of the year under the direction of President Charles E. Smith, '00," to use the words of the Council's Secretary, Professor C. E. Locke, '96.

It has been bruited about in the past that the May meeting of the Council is always dull, it being the occasion for the presentation of annual reports by all the committees. That this latest May meeting was not dull was due mainly to the gift which President Smith has for running a meeting with verve, humor, and dispatch, to the irrepressible prankishness of the Secretary (he embellished his annual report with semi-libelous quips about all the officers and most of the Council membership), to the gracious coda delivered by Dr. Compton, and to Dr. Harlow Shapley, Director of the Harvard Observatory and a member of the Technology Corporation.

Despite the title of Dr. Shapley's talk ("Remarks on Engineering Illiteracy Eradication"), a confection which he attributed quite plausibly to the Secretary, he gave a felicitous and charming talk on "Friends of the Library," an organization which he has furthered toward the end of making the Institute's library more used and useful. Dr. Shapley expressed the hope that Alumni would not only make financial contributions to the library, but encourage contributions directly or through bequests of special books and collections.

Quote-worthy excerpts from reports presented at the meeting:

¶ A total of 60 alumni club meetings outside of Boston were visited during the year by representatives of the Institute or the Alumni Association; the Technology movie was shown at 42 places, going even to Europe and Asia; and the Edgerton movie has gone to 67 places. It is estimated that at least 10,000 people have seen one or the other or both of these cinemas during the year.

¶ During 1934-1935, the Association's income and expenses both increased by \$1,000. While an operating deficit has been incurred this year of \$682, the Association carried over from last year a surplus of \$2,800. Result on May 1: a net surplus of \$2,100. Total income as of May 1, \$27,361.08; total expenditure, \$28,043.32.

¶ During the 11 months' period from June 1, 1934, to May 1, 1935, 5,785 Alumni paid dues. This represents 19.3% of all living graduates and former students, 24% of those for whom the Institute has good addresses, and 35.4% of the total number of graduates.

¶ During 1934-1935, 106,000 pieces of mail matter were sent from the alumni office to Alumni.

¶ On May 1, the total number of living graduates and former students total 29,990. Of this number, there are good addresses for 24,212, leaving a list of 5,778 alumni for whom the Institute does not have good addresses.

¶ During the year, a total of 949 men in 16 different sports participated in the Institute's athletic program.

To quote from the Secretary's minutes: "The meeting was closed most fittingly by President Karl T. Compton, who gave expression to his deep appreciation of the coöperation and help of the Alumni Association, the Alumni Council, and of the various officers and members as individuals. After Dr. Compton and President Smith had had their say, some of the officers appeared a little worried over the condition of their coats, fearing that the backs might have become worn a little as the result of many friendly pats they had received."

Athletic Notes

AS THE academic year ended, the Alumni Advisory Council on Undergraduate Athletics took stock of the year. As it pointed out to the Alumni Council (see above), nearly 1,000 students participated in 16 different sports; and happily there had been no retrenchment in Institute athletics, such as prevailed in other colleges, because of decreased income from football games.

Other athletic notes from the minute book of the Council: The past academic year has witnessed many new Technology records in track and swimming which have been approved by the Advisory Council on Athletics. J. R. Thomson, '37, of Greenwich, Conn., a sophomore member of the track team, now holds three Technology records — in the high jump, indoor high jump, and the discus. In winning the high jump at the New England Intercollegiate meet, Thomson jumped 6 feet, $2\frac{1}{4}$ inches, breaking the previous Varsity record of 6 feet, $\frac{7}{8}$ inches, made by himself last year when he was a freshman. In the Greater Boston Intercollegiate Meet, Thomson broke the Technology discus record of 128 feet, $3\frac{3}{8}$ inches, made by M. R. Gray, '29, in 1928, with a throw of 128 feet, 8 inches. Thomson's mark in the indoor high jump of 6 feet, 2 inches, made in the K of C games last January, breaks the old record of 5 feet, $11\frac{3}{4}$ inches, made in 1930 by C. D. Sullivan, '34.

S. T. Johnson, '36, captain-elect of the track team and son of "Doc Johnson," trainer of the track team, at the I.C.A.A.A. indoor meet in New York, broke his own record in the broad jump of 23 feet, 4 inches, made in 1934 with a leap of 23 feet, $4\frac{3}{4}$ inches.

W. N. Stark, '35, now holds the Technology record in the Indoor Pole Vault of 12 feet, 2 inches. This record replaces the old mark of 12 feet, jointly held by H. F. E. Dixon, '35, and G. S. Donnan, '36, last year.

At the I.C.A.A.A. outdoor meet in Cambridge on June 1, both Thomson and Johnson bettered the accepted Technology records in their respective events. Thomson tied for first in the high jump with 6 feet, 3 inches and Johnson won third place in the broad jump with a leap of 24 feet, 2 inches, a wonderful jump against the best collegiate competition from coast to coast. The efforts of these two athletes gave Technology $7\frac{1}{2}$ points, the third largest total of points ever collected by an Institute team in I.C. 4-A competition.

In swimming, there are three new marks. In the 300-yard medley relay for 75-foot pools, C. C. Dodge, '37, B. Vonnegut, '36, and R. J. Granberg, '35, swam the required distance in 3 minutes, $26\frac{5}{10}$ seconds, lowering the old record of 3 minutes, $28\frac{3}{5}$ seconds, made in 1934 by R. G. Edmonds, '34, W. H. Muller, '35, and B. O. Summers, '34.

C. C. Dodge, '37, holds the new Technology record of 1 minute, 51 seconds in the 150-yard backstroke for 75-foot pools and the record of 4 minutes, $42\frac{1}{10}$ seconds in the 300-yard, individual medley swim for 75-foot pools. The previous record in the backstroke was 1 minute, $51\frac{2}{5}$ seconds, made in 1929 by L. D. Luey, '29; in the individual medley, 4 minutes, $19\frac{4}{5}$ seconds, made in 1929 by E. H. MacKay, Jr., '31.

ESTABLISHED 1818

Brooks Brothers,

CLOTHING,

Gentlemen's Furnishing Goods,

MADISON AVENUE COR. FORTY-FOURTH STREET
NEW YORK

Special Summer Service

During the Summer months our New York, Boston and Newport stores are equipped not only to meet every requirement as usual before you leave town . . . or as you are passing through . . . but also to render a prompt and careful Mail Order Service. Specification of sizes, colors, patterns and materials are carefully followed . . . with direct mailing to Summer addresses.

Our Boston store (Newbury cor. Berkeley Street) is particularly convenient for customers vacationing anywhere in New England.

BRANCHES

NEW YORK: ONE WALL STREET
BOSTON: NEWBURY COR. BERKELEY STREET



© Brooks Brothers

INFORMATION ON M.I.T.

THE TECHNOLOGY REVIEW BUREAU exists to supply authoritative information to anyone interested in details regarding the Massachusetts Institute of Technology. It serves as a clearing house for inquiry and aims to further the spread of exact information regarding entrance requirements, outline of courses, subjects of instruction and other information which may be of aid to the students considering undergraduate or graduate study at the Institute.

The Institute publishes a variety of bulletins, as well as a catalogue of general information essential to the entering student. The Technology Review Bureau will be glad to send, gratis and post free upon request, one or more copies of any publication listed below, or to forward any special inquiry to the proper authority.

Ask for the following pamphlets by their descriptive numbers

- | | | | | |
|--|---|---|--|---|
| 1: For general information, admission requirements, subjects of instruction, ask for Bulletin 1. | 2: For announcement of courses offered in Summer Session, ask for Bulletin 2. | 3: For information on courses in Architecture, both Undergraduate and Graduate, ask for Bulletin 3. | 4: For information on Graduate Study in Science and Engineering, ask for Bulletin 4. | 5: For a popular presentation of Educational Opportunities offered at M.I.T., ask for Bulletin 5. |
|--|---|---|--|---|

All inquiries sent to the address below will receive prompt attention

THE TECHNOLOGY REVIEW BUREAU

ROOM 11-203, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

MACHINE-MADE BEAUTY

(Continued from page 369)

he learns to diagnose what the man in the street likes, and will buy, but he does not rely entirely upon his cultivated hunches.

Keeping in mind the functional theory of design, the artist must study all the uses of the product to be designed, all the conditions under which it will be used, and the characteristics of the materials of which it is made. In this way he builds up a general conception of the whole problem. In forming his solution, he is influenced by numerous other considerations. He must become familiar with the engineering aspects of the problem — its mechanical nature, chemical analysis, structural design, or, as is usually the case, two or more of these. The designer must be in constant consultation with specialists in other fields, and matters of engineering and choice of materials must be decided with the limitations imposed by production methods always in mind. The particular factory where the product is to be manufactured must be studied, so that the redesigned product will be within the capabilities of the factory equipment and organization.

The cost of manufacture has a decided bearing on the ultimate design, as a new set of dies for a seemingly simple change may be enormously expensive. The designer must, further, be acquainted with advertising and marketing principles, for these are closely allied to the success or failure of a new design. And he must consider the likes or dislikes of a sometimes fickle and irrational public, primarily by studying what does and what does not sell and the reasons therefore; which means haunting all kinds of stores with ever alert eye and ear to fathom the unpredictable whims of the public. It is a part of the job to make sure that the product he is designing will not insult public mannerisms or taste.

A specialist in his field — that of making machines turn out articles of beauty in mass production — he has definite objectives in mind when he goes into a factory to study the methods from beginning to end. He is striving for a predetermined result and his train of thought goes deeper than the seemingly elementary questions he asks the production men. The designer is, in effect, a critic, whose first job is to pick holes in the existing methods of design, production, and merchandising. He then sets out to create a new and larger demand for that particular product, primarily by

means of a new design, born of research, investigation, comparison, inventiveness, and artistic ability.

As the manufacturer, engineer, and designer learn to appreciate each other's problems, a greater success in redesigned articles will result. It is a curious paradox that men of artistic ability, such as architects and designers, are presumed to know enough about technical and engineering subjects to be able to talk intelligently with technicians, while men of technical training have always discussed subjects of artistic concern with reluctance, as though they were meant for an entirely different breed of person. This is unfortunate, for the subject of design can be studied and learned by the most mathematically minded slide-rule juggler. A relatively small amount of time spent in grasping the principles of design would work for greater harmony and bigger success in all matters where engineer and artist must work together, and that includes practically all problems of industrial design.

THE money value of a new and successful design is a variable quantity, depending on the existing market, the increase in sales produced by the new design, and the profit created by this increase in sales. If the market is nation-wide, then a relatively small increase in sales might produce a relatively large profit for the manufacturer. On the other hand, if the market is limited by the nature of the article, then a larger proportionate increase in sales would be necessary to produce a comparable profit.

An additional value which industrial design offers, and which is usually overlooked, is the satisfaction and pride resulting from the creation of a pleasing and well-made product. If machines can produce art, then the men who make machines produce art become artists of a kind, at least in spirit, and may be justly entitled to the measure of elation which every creator of artistic objects experiences. Even the man who does no more than oil the tool that produces art is bound to be prouder of his job. It may seem extreme to apply modern product design to such purely functional objects as steam gauges, turbines, recording thermometers, and so on, yet such design pays, not only from the point of view of the man who originally makes them and sells in competition, but from the point of view of the buyer; for it has been found that men take more pride in looking after and operating well-designed machine parts, which results in better *esprit*, lower (Concluded on page 384)

Western Electric

Leaders in Sound Transmission Apparatus



"Stets"

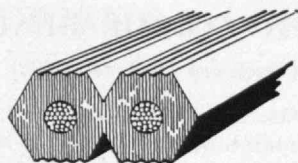
If interested in the subject—send for new bulletin
"Feed Water Regulators and How They Work."

MENTION THIS PUBLICATION

That's All

STETS COMPANY

BOSTON



HEXACORD

Twin Parallel Lamp Cord

N.E.C. — Type PO-SJ

A new high grade, low priced, rubber sheathed, twin lamp cord made in four bright, permanent colors; brown, black, green, and ivory; in sizes No. 18 and No. 16.

Each insulated conductor is hexagonal in shape and consists of fine copper wires covered with high grade insulation. Its novel construction does away with many of the hazards of ordinary lamp cord. The cord divides easily leaving each conductor with its full protection of rubber right up to terminal posts or connections. HEXACORD is easy to install, attractive in appearance and very flexible.

Send for sample card showing construction and colors

SIMPLEX WIRE & CABLE CO.

79 Sidney Street, Cambridge A
BOSTON, MASS.

**KEEP POSTED
ON THE IMPORTANCE OF
MISCELLANEOUS SHOP EQUIPMENT**

*With GOOD
Equipment*

. . . many a job can be simplified

. . . many a job can be done better

. . . many a dollar can be saved

VICES
SURFACE PLATES
STRAIGHT EDGES
BENCH CENTERS
GROUND FLAT STOCK

Other Items
are listed in
Catalog 31

Brown & Sharpe
Mfg. Co.
Providence, R. I.



BS

BROWN & SHARPE TOOLS

"World's Standard of Accuracy"

Luxury without Extravagance

Many travelers of world-wide experience often express themselves as marvelling that they can obtain so much at the Copley-Plaza for so little.

They, who so often classify hotels in two very definite categories: the hotels they have tried, and the hotels they go back to — say of the Copley-Plaza —

"Revisiting the Copley-Plaza is like meeting an old friend in some port-of-call far from home. You are instantly at ease, warmed, stimulated. You are with your own people."

Rooms from \$4.00

The COPLEY-PLAZA, Boston

ARTHUR L. RACE, Managing Director



The Lobby is noted for its atmosphere of quiet, cordial welcome. Confusion is absent here. It is more of a Reception Hall . . . where reception is an art.

Have You PRINTING? PROBLEMS?

WE HAVE a department in our plant equipped for experimental work in photography and plate and cylinder etching, with special machinery for printing on leather, rubber, and fabrics, in both sheet and roll form, with special inks and lacquers. We have recently developed *Ascolac Leather Shoe Trim*, *Dri-Rol Transfer Paper*, *Illustro Gummed Tape*, *Decorative Box Papers*.

[SPECIALIZING IN NARROW
WIDTH ROLL PRINTING]

The Murray Printing Company

KENDALL SQUARE, CAMBRIDGE

The Sheraton

BOSTON

Resplendent in its waterside park setting, this charmingly modern residential hotel offers superior accommodations by the day, week or month at rates equally attractive.

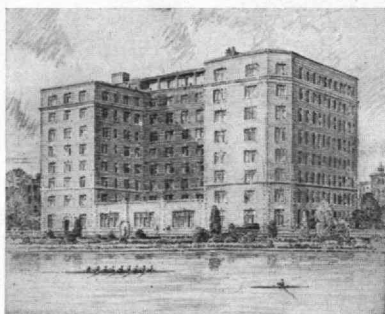
Also

Unfurnished, non-housekeeping suites
on annual lease

A CUISINE PAR EXCELLENCE

Literature sent on request

Geo. R. Sanford, Mgr.



On the Charles at 91 Bay State Road

Facing M. I. T.

THE RUMFORD PRESS

Concord, New Hampshire

1 1 1

*Makers of Magazines and Books
of Distinction*

MACHINE-MADE BEAUTY

(Concluded from page 382)

replacement costs, and lower operating costs, due to greater ease of maintenance.

The amount which a manufacturer should pay for a new design ought, of course, to be in proportion to the increased revenue the new design will bring. Therefore, we find designers charging for their services in various ways. Sometimes a retainer is paid which is estimated to reimburse the designer periodically for his value to the manufacturer. In this case, part of the value may be an agreement not to design similar articles for competitive firms. A fixed fee for a particular job may be agreed upon, though perhaps a fairer method is to pay the costs accrued by the designer in performing his work, plus a royalty on the increase in sales which the redesigned article produces. Here, the royalty represents the value of the designer's skill. Still another method is the cost, plus a fixed fee. There is as yet no standard method of payment in this infant profession and any combinations or modifications of the above methods may be adopted. Fees run anywhere from a few hundred dollars up to \$25,000 or more, depending upon the particular conditions surrounding a job.

It must be remembered that the designer has expenses which frequently run into large sums. Aside from office overhead and salaries, there may be surveys, engineering consultations, research work, models, and other necessities for a proper design, the cost of which varies widely depending upon the article, the manufacturer, and the possible market.

Industrial design is well on its way to becoming a permanent member of our family of professions. Its growth so far has been rapid, even during these past years of stagnation. It has opened up new fields for designers and manufacturers to conquer and has slipped a wedge in our cracked economic system which is helping to break up the frozen state of mind and industry.

MORNING FACE IN THE BERKSHIRES

A small boarding school for boys and girls from four to fourteen. Prepares for leading secondary schools. Men and women teachers who understand children. Intimate home life.

for information address

MRS. ELEANOR RUNKLE CRANE, Director, Richmond, Mass.

Evening School of Law – NORTHEASTERN UNIVERSITY

THIRTY-SEVENTH YEAR

Four-year course granting degree of Bachelor of Laws.

Case method of instruction.

An evening law school with a national reputation for excellence.

Student body of mature men and women.

Alumni are successful as lawyers, judges, and business executives.

Exceptional faculty of experienced lawyers who are graduates of leading day law schools.

Registration day or evening; write or call school office.

S. KENNETH SKOLFIELD, Dean, 312 Huntington Avenue, Boston, Mass.

Telephone: Kenmore 5800

NEW WORLDS TO CONQUER

(Continued from page 371)

industrial population calls for a more effective handling of water supply, sewage disposal, industrial wastes, and transportation.

Some of you are going to be architects. It is true that our national condition of suspended animation in the last few years has greatly reduced the apparent need for architects, but this situation is certainly temporary. There is a pent-up demand for housing which, when released, will tax all our resources of architectural talent. Furthermore, there will be a new note in architecture, as there was a new note with the introduction of the skyscraper in the last generation. This new note will be born of economic necessity and technical progress, and its progenitors will be the tendency to decentralization of industry, subsistence homes, improved transportation, air conditioning, new structural materials, and more efficient methods of fabrication and erection of buildings.

Some of you are going to be scientists. While the geographical frontiers have shrunk, the frontiers of science are expanding enormously. Ninety-nine and ninety-five hundredths per cent of the matter and energy of the universe are located within the nuclei of the atoms which make up the universe. Only the merest beginning has been made in discovering the ways in which these nuclei are constituted, how they are held together, and how their energy can be tapped. In fact, most of our

present, meager knowledge of atomic nuclei, cosmic rays, neutrons, deuterons, and positrons has been discovered during the years in which you have been here in college. In the biological field, such discoveries as those of the electric currents produced by heart and brain action, or of the stimulation of cell growth, or of the control of glandular action are only a few examples of the new things just peeping around the corner. Science was never so exciting a field for discovery as at present.

Some of you are going to be electrical engineers. Your situation at the present moment is not entirely happy. Jobs in this field are conspicuous by their absence on account of the depressing effect on the electrical industry of the threatening clouds of confiscatory or paralyzing federal legislation and of government competition in the public utility game—the government holding loaded dice. But there are too many big possibilities just around the corner, and the progress of electrical science is too important a thing to be stopped either by abuses in business management, on the one hand, or by ill-considered attempts to correct these abuses, on the other. Leaders in this industry look for its resumption of rapid growth in the very near future. Certainly nothing has developed more rapidly or contributed more effectively to our standard of living than has the electrical art. Of all the agencies which serve man, electricity is the most versatile and convenient. There is every reason to think that electrical art is still in its infancy and has a tremendous urge to grow. (Concluded on page 386)

PREPARATORY SCHOOLS FOR BOYS

BERKELEY PREPARATORY SCHOOL

Established 1907

Special Preparation for M. I. T.

Harry F. Cade, Jr., '28, *Principal*

1089 Boylston Street, Boston

Tel. Commonwealth 9262

CHAUNCY HALL SCHOOL

Founded 1828. The School that confines itself exclusively to the preparation of students for the Massachusetts Institute of Technology.

FRANKLIN T. KURT, *Principal*, 553 Boylston Street, Boston, Mass.

HEBRON ACADEMY

Thorough college preparation for boys at costs surprisingly low due to endowment and country location. Graduates in 32 colleges. Experienced faculty of 15 men. Excellent dormitory, classroom, laboratory and athletic equipment. For book, "Building Scholarship," address

RALPH L. HUNT, *Principal*, Box T, Hebron, Maine

HUNTINGTON SCHOOL FOR BOYS

Five Forms. Special two-year course for entrance to M. I. T.

Summer Session (Co-educational)

Send for catalogues

CHARLES H. SAMPSON, Ed.M., *Headmaster*

320 Huntington Ave., Boston

Tel. Kenmore 1800

MOSES BROWN SCHOOL

An Endowed New England School with an excellent record in preparing boys for leading colleges. 25-acre elm-shaded campus. Athletic Fields. Gymnasium. Swimming Pool. *For Illustrated Catalog Address:*

L. RALSTON THOMAS, *Headmaster*, 257-A Hope Street, Providence, R. I.

NEW HAMPTON SCHOOL

115th year. A New Hampshire School for Boys. Six Modern Buildings. Thorough College Preparation. Junior Course in Business. Athletics for Every Boy. Moderate Tuition. *Address*

FREDERICK SMITH, A.M., Box 198, New Hampton, N. H.

NORTHWOOD SCHOOL

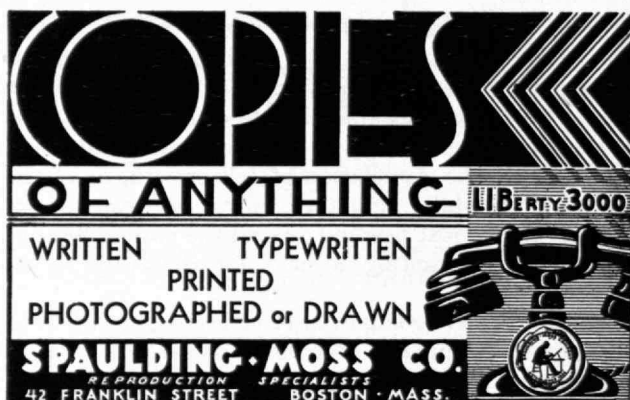
In the heart of the Adirondacks. Under Lake Placid Club Education Foundation. Unusual success in college preparation. Emphasis on recreation that can be continued throughout life. Winter sports. Separate junior school for boys, 8 to 12.

IRA A. FLINNER, Ed.D., *Director*, Box T, Lake Placid Club, N. Y.

SHATTUCK SCHOOL

A Church school for boys. 75th year. Stands high among schools for sound scholarship, manly character and Christian citizenship. Military training. Sends boys to M.I.T. each year.

Address The Headmaster, Faribault, Minn.



COPIES
OF ANYTHING **LIBERTY 3000**
 WRITTEN TYPEWRITTEN
 PRINTED
 PHOTOGRAPHED or DRAWN
SPAULDING-MOSS CO.
REPRODUCTION SPECIALISTS
 42 FRANKLIN STREET BOSTON - MASS.

MERRIMAC CHEMICAL COMPANY

Subsidiary of Monsanto Chemical Company

EVERETT
 MASSACHUSETTS

*The largest and oldest
 chemical concern in New England*

Founded in 1853



Transits and Levels are used on all largest works and by U. S. Govt. for utmost precision.

New catalog, just issued, sent gratis

BUFF & BUFF CO. Boston 30, Mass.

Handsome nickel bas-relief of a Buff Transit sent gratis to engineers

CHARLES H. JOHNSON

M. I. T. '05

LIFE INSURANCE * * * ANNUITIES

New England Mutual Life Insurance Company

80 FEDERAL STREET, ROOM 1300, Liberty 0553, BOSTON, MASS.

WILLIAM P. BERKELEY

M. I. T. '27

*Equitable Life Assurance Society of
 the United States*

100 Milk Street, Boston

Hancock 6200

Donald G. Robbins, '07 William H. Coburn, '11 William F. Dean, '17

William H. Coburn & Co.

INVESTMENT COUNSEL

68 Devonshire St.

Boston, Mass.

NEW WORLDS TO CONQUER

(Concluded from page 385)

Some of you are hoping to enter the field of business and engineering administration. For you also the disappearance of geographical frontiers has created new opportunities, since increased competition and growing need for using our store of natural resources wisely has put a steadily increasing premium on good management. The problems of management will be more numerous, complex, and difficult. If you are as good as we think you are, you will find in this field ample scope for all the power you can muster.

I might go on in this sense with other examples, but you can easily do that for yourselves. The point is that there are new worlds to conquer, and that we are counting on you to conquer them. We have tried, through your theses, colloquia, lectures, and contact with research to give you the conception of your profession as a live and growing thing, with which you will have to live and grow. The next stage of your career is in your own hands. You will have less help and more responsibility from now on.

To meet these opportunities successfully, you will need to be alert to new possibilities, adaptable to new situations, courageous in the face of difficulty, hard working, and possessed of a never-faltering integrity; you will have to put honorable and coöperative service ahead of self-interest; you will have to continue to be students of your profession and your environment.

I want to assure you that the interest of my colleagues in your welfare does not cease at this point. We will follow your future careers with concern and, we hope, with pride. We, and the great group of Alumni, will try to give you a helping hand as opportunity may arise, if you will give us a chance by maintaining your contact with the Institute. For this reason, as well as for the human and institutional relations that bring mutual pleasure and inspiration, we hope that you will maintain your interest in each other and in us.

I bid you God's speed on your way, with confidence in your ability and envy of your opportunity, and with a hope that you will not be discouraged if the world does not immediately acclaim you as the group it has long been waiting for to run its affairs. It needs you, but it may not know it; and, so, you must prove it. Good luck to you!



Everything in
MECHANICAL
RUBBER
GOODS

Industrial and Automotive Brake Lining
 and Clutch Facings—Rubber Belting
 —Hose—Molded Goods—Packing—
 Rubber Rolls and Abrasive Wheels.

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES AND FACTORIES: PASSAIC, NEW JERSEY

PROFESSIONAL CARDS

JACKSON & MORELAND

Engineers

Public Utilities — Industrials
 Railroad Electrification
 Design and Supervision — Valuations
 Economic and Operating Reports

BOSTON

NEW YORK

H. K. BARROWS, '95

M. Am. Soc. C. E.

CONSULTING HYDRAULIC ENGINEER

*Hydro-electric developments — Water supplies. Reports, plans,
 supervision. Advice, appraisals.*

6 BEACON STREET

BOSTON, MASS.

EADIE, FREUND AND CAMPBELL

CONSULTING ENGINEERS

110 WEST FORTIETH STREET

NEW YORK CITY

PLANS AND SPECIFICATIONS — EXAMINATIONS AND REPORTS

Power, Heating, Ventilating, Electric, Plumbing, Sprinkler, Refriger-
 ating, Elevator Installations, etc., in Buildings and Industrial Plants

J. K. CAMPBELL, M. I. T. '11

FAY, SPOFFORD & THORNDIKE

ENGINEERS

BOSTON, MASS.

BRIDGES

WATER SUPPLY AND SEWERAGE

PORT AND TERMINAL WORKS

FIRE PREVENTION

INVESTIGATIONS

DESIGNS

SUPERVISION OF CONSTRUCTION

STANLEY G. H. FITCH '00

CERTIFIED PUBLIC ACCOUNTANT

of PATTERSON, TEELE & DENNIS

1 Federal Street, Boston, Mass.

AUDITS

INVESTIGATIONS

New York

Boston

Washington

Baltimore

MAURICE A. REIDY

Consulting Engineer

STRUCTURAL DESIGNS

FOUNDATIONS

CONSTRUCTION CONSULTANT AND ARCHITECTURAL ENGINEER

Estimates and Appraisals

44 SCHOOL STREET

BOSTON, MASS.

BURTON W. CARY '08

MELVIN R. JENNEY '21

FISH, HILDRETH, CARY & JENNEY

Attorneys-at-Law

SPECIALIZING IN

PATENT AND TRADE-MARK PRACTICE

53 State St., Boston

Hubbard 2496

EVERETT E. KENT

PATENT LAWYER

*Patents, Trade Marks, Copyrights**United States and Foreign*

75 Federal Street, Boston

HUBbard 0234

ARCHIBALD H. SPAULDING '14

PHILIP B. TERRY, '13

SPAULDING-MOSS COMPANY

"Reproduction Specialists"

Blue Prints Photostat Prints Planograph Prints

BOSTON

LIBerry 3000

EMERY, BOOTH, VARNEY & TOWNSEND

EMERY, BOOTH, VARNEY & HOLCOMBE

PATENT LAWYERS

THOMAS B. BOOTH, '95 AMASA M. HOLCOMBE, '04

JOSEPH Y. HOUGHTON, '26

Boston

Washington

AN AID TO INDUSTRY IN LOCATING OUTSTANDING MEN

A MESSAGE TO THE CLASS OF 1935

The Placement Bureau is maintained by the Institute to aid industry in selecting technically trained personnel, and to assist Technology alumni in securing positions for which they are particularly fitted.

Many openings for 1935 graduates are due to develop during the next few months if present indications and past experience can be used as a guide.

The Placement Bureau needs your cooperation and urges you to report promptly any changes in your address or employment status.

Inquiries regarding this service should be addressed to

**PLACEMENT BUREAU
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CAMBRIDGE, MASS.**

This is the sixth in a series of advertisements on the operations of the Placement Bureau

AN AID TO ALUMNI IN FINDING DESIRABLE POSITIONS

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Salem Group

The second meeting of this group was held at Putnam Lodge on April 30, under the direction of Hugh Hamilton, Jr., '29, as chairman, and Thomas K. Fitzpatrick '33, as toastmaster. The gathering has been extended to include what is known as Greater Salem which thus made possible the attendance of 70 men. The ladies were absent, perhaps because a turkey and not spring-chicken dinner was served.

The guests of the evening were Karl T. Compton, Charles E. Locke '96, and Ralph T. Jope '28. A number of most interesting events preceded the speaking. One was the rising of each member to announce his name and occupation. I am sorry to report the oldest member, George R. Underwood '83, as saying that he was loafing. A song contest was staged, the prize being the amber fluid with foam on top. An intelligence test was won by some of the brown baggers from the Hygrade-Sylvania Company.

Professor Locke reminded us of the June reunion and added spice with a joke or two. Ralph Jope spoke on athletics at the Institute and mentioned the rules of the game laid down by the late Dr. Rowe '01. Dr. Compton spoke on student problems and was particularly interesting in his description of some of the research work now in progress. He spoke of the desire of the Institute to bring the industrial problems right down to the undergraduate and thus fit him better for future work. Dr. Compton proved a most interesting guest and speaker.

Before the meeting was over, a telephone message was received from the Mayor of Salem stating that several engineering positions would be open in the near future on a Federal project in this vicinity. The group, thus, demonstrates one more excuse for its existence.

Detroit Technology Association

The Association wishes to report a most successful winter season. Our present officers are John H. Little '23, President; Edward A. Ash '22, Vice-President; John E. Longyear '26, Secretary; and Philip C. Baker '16, Honorary Secretary. The vacancy caused by the untimely death of our Treasurer, Harry M. Boardman '26, has not yet been filled. We have continued to finance *The Review* for two Detroit High Schools. The listing of our Club in Detroit's telephone book continues to pay dividends. Newcomers and visitors take advantage of this facility to locate old friends and obtain information.

Our regular monthly meetings have been well attended, the highest being 98 at our Annual Meeting in March. We

have used both the University Club and the Intercollegiate Alumni Club as meeting places. We have four dozen M.I.T. Wedgwood dinner plates which we use when meeting at the University Club. These plates are a gift of local Tech man Minot S. Dennett '11. Our Program Committee, Franklin Fricker '25 and Robert Gans '13, have worked tirelessly throughout our winter season with the result that we have had a variety of subjects presented by authorities. A brief *résumé* of our meetings follows:

October: Our winter season started by a general get-together and a showing of the Edgerton high-speed movie. After the showing of the movie, several who were familiar with movie technique were called upon for remarks.

November: Dr. Robert Haskell, Superintendent of the Wayne County Training School, talked to us on "The Place of the Social Outcast and the Moron in Society." It was very enlightening.

December: Elliott Harrington '18, of the Air Conditioning Department of the General Electric Company at Schenectady, told us of the work of his department. It was most interesting to hear of the development of the idea Mr. Harrington himself foresaw.

January: Tod Rockwell, feature sports writer of the Detroit *Free Press*, spoke to us on "The Inside Dope on Professional Sports in Detroit." His human-interest stories about his experiences with famous athletes were especially good.

February: Edward E. Rothman, Vice-President of the Campbell Ewald Advertising Agency, talked to us concerning his work. He made us more fully appreciative of advertising's place in the economic picture. It was most instructive.

March: We held our annual meeting. We advertised it as a most enjoyable gathering of Tech men and indeed it was. From 6:30 to 7:30 we gathered around the "punch bowl" of good cheer and renewed old acquaintances and made new. At 7:30 we (98 strong) moved into the dining room, where we enjoyed the singing of songs (led by Tech man Robert Doremus '14), excellent food, and a program unequalled in our history. Tech man Charles F. F. Campbell '01 acted as toastmaster. We in Detroit are indeed fortunate in having a man such as Mr. Campbell; he is an excellent talker, a teller of stories without a peer, and possesses that happy facility of keeping things moving at the correct rate of speed. Our toastmaster first introduced Tech man B. Edwin Hutchinson '09, Vice-President and Treasurer of the Chrysler Corporation, who with great smoothness introduced one of our two speakers of the evening, William S. Knudsen, Executive Vice-President of General Motors. Mr. Knudsen is not a college man but says he is M.I.T. second generation

(his son is M.I.T. '35). Mr. Knudsen talked of NRA, government and industry, and the like. Knowing that Mr. Knudsen actually worked up from the bottom, we shall remember a long time what he had to say regarding labor and opportunity in the United States.

Our toastmaster next introduced Tech man William R. Kales '92, member of the Corporation, who, in turn, fittingly introduced our other speaker of the evening, Jerome C. Hunsaker '12, Head of Mechanical and Aeronautical Engineering at Technology. Dr. Hunsaker told us very interestingly of new happenings at Tech. Not only because Dr. Hunsaker is the successor of Professor Miller, but also because of his own most enjoyable personality, we in Detroit were very happy to have the opportunity to meet with him.

A few of those in attendance did not sign our registration list (maybe too much punch). However, here are those who did: John H. Little '23, H. W. Alden '93, William R. Kales '92, B. E. Hutchinson '09, W. Knudsen (2nd generation, 1935), J. C. Hunsaker '12, Charles F. F. Campbell '01, Eddie Ash '22, C. B. Fritsche, Ind. '17, S. Cuyler Greene '85, Robert Gans '13, Robert C. Doremus '14, J. E. Longyear '26, Franklin Fricker '25, David M. Sutter '25, H. M. Foley '12, C. Loring Hall '15, Fred J. Dykstra '26, John C. Pope '24, Wheeler G. Lovell '24, C. C. Smith '28, P. L. Loewe '31, L. Stander '31, M. Udale '06, A. E. Bannister '15, E. O. Christiansen '10, C. H. R. Johnson '21, Daniel L. Quirk, Jr., Guest, John L. Herzog '28, Joseph S. Yates '27, Edward H. Lander, Guest, S. H. Creighton, Jr., '17, E. F. Dotten '19, A. Litchfield '18, Stuart Nixon '21, J. D. Kennuican, Guest, William Donovan, Jr., '24, T. W. Root, Guest, Harry Karcher '25, Monte Kahlbaum, U. of M., Charles E. Quick '33, W. Arnold Houser '15, Spencer D. Hopkins '16, W. R. Appeldoorn '33, John R. Odell '02, F. N. Phelps '13, H. C. LeVine '18, Witold W. Kosicki '20, Henry J. Kent '07, George F. Ashley '00, M. H. Harrington '13, Huntley Child, Jr., '34, A. S. Douglass '08, L. E. Williams '01, Granger Whitney '87, William H. Correal '24, Edward H. Moll '24, J. M. Campbell '25, Samuel N. Heyman '19, George R. Anthony '98, Frank H. Davis '04, H. J. Quilhor '17, M. W. Pettibone '17, Philip C. Baker '16, W. R. Strickland '98, George D. Huntington '98, Wolfgang F. Rahles '34, Kenneth J. VanVliet, Columbia '34, Page Golsan, Jr., '34, M. D. Hanes '30, J. J. Condrun, Guest, C. W. Taylor '21, M. S. Dennett '11, Charles Ellis '17, P. B. Loomis '26, W. H. Manning '24, Robert C. Utley, Guest, Jarvis B. Webb, Guest, John D. Rumsey '33, S. F. Brown '23, G. G. Kearful '24, Frank Perry, Guest, C. S. Comey '22, G. D. Cummings '26, C. Criswell '28,

T. O. Richards '25, R. S. Bridge, Ground School '17, D. R. Knox '27, A. F. Bernthal, V. P. I. '28, Maurice Ash, Jr., '26.

April: Mr. Carl B. Fritsche, President of the Metalclad Airship Company, spoke to us on lighter-than-air craft. Mr. Fritsche is an authority on his subject. He was the leading spirit in the organization of the company that built the metal airship which is still in operation in Navy service. — JOHN E. LONGYEAR '26, Secretary, 2000 Second Avenue, Detroit, Mich.

M.I.T. Club of Northern New Jersey

A business meeting and aviation smoker formed the second get-together of the new Club, held on the evening of May 9 in the main dining room of the Newark Athletic Club, Newark, N. J., with 170 in attendance.

The short business part of the program included acceptance of the minutes of the organization banquet on March 15 which was attended by 328. The Club now has 380 charter members. Reports of the Treasurer and the charter committee were accepted. It was reported that the Technology Club of New York had suggested a bridge tournament and a group of interested members is arranging to accept the challenge. The luncheon committee reported considerable interest in having a regular luncheon in Newark, the place and time to be announced later.

L. A. Ochs, whose father ran a bookstore on Cornhill, Boston, kindly presented the Club with a framed picture of the tug-o'-war team of the Class of '92, consisting of Messrs. Doe, Harvey, Du Bois, and Locke. H. J. Horn '88 was introduced as the Club's representative on the Alumni Council at Cambridge.

Prior to the introduction of the speakers, A. W. Lunn '09 and J. H. Teeter '22 led the group in songs and cheers. The chairman of the evening, J. F. Maguire '17, then introduced A. R. Brooks '17, war ace, who presided for the aviation program. Mr. Brooks spoke briefly on the subject of aviation and introduced as the first speaker E. P. Warner '17, former Assistant Secretary of the Navy for Aeronautics and now editor of *Aviation*. Mr. Warner traced the development of aviation from its early days through to the present time and spoke of various matters, engineering, political, and financial, which are operating to effect further development in the industry.

Major E. E. Aldrin '17, manager of the aviation department of the Standard Oil Company of New Jersey, was introduced as the next speaker. He spoke of his recent visit to Europe and of the progress in commercial and private aviation taking place there in comparison with similar flying activities in the United States.

Next Mr. Brooks introduced Lieutenant Richard Aldworth, manager of the Newark Airport, who spoke briefly on the advantageous location of this airport for air transport to the Greater New York district and outlined the possibilities for the future.

The Club has elected the following officers: President, H. J. Horn, Jr., '22; Vice-Presidents: J. F. Maguire '17, E. W. Vilett '22, W. J. Lutz '23; Secretary, W. I. McNeill '17; Treasurer, W. J. Grady '22; Executive Committee, C. A. Clarke '21, H. F. Stose '21, M. M. Manshel '22; Advisory Committee, F. B. Jewett '03, A. R. Cullimore '07, A. W. Lunn '09, G. G. Holbrook '10, W. J. Orchard '11, R. E. Zimmerman '11, W. H. Price, Jr. '14.

The formal meeting ended with the singing of the Stein Song and the members went to tables at the rear of the dining room where a supper was served. — CAROLE A. CLARKE '21, Publicity Committee, 10 University Avenue, Chatham, N. J.

New Haven County Technology Club

The Club has had a very successful season. On January 31, 32 members were present at a meeting held at the home of Charles E. Smith '00 in New Haven. Mr. Smith, in addition to being host, was also the speaker for the evening, and presented some very interesting high lights about the streamline trains. Two reels of moving pictures were shown, one reel about the Burlington Zephyr, and the other a parody on the De Witt Clinton train which was thoroughly enjoyed by all present.

On March 16, the Club had the honor of entertaining President Karl T. Compton at a luncheon meeting at the Yale Graduates Club. There were 42 present who heard President Compton make a few informal remarks concerning the affairs at the Institute. After the luncheon several of the men availed themselves of the opportunity to talk to President Compton personally.

The next meeting was the annual joint meeting with the Hartford Technology Club, held at the Hotel Elton in Waterbury. An exceptionally good turnout was had that night and everyone present enjoyed the speaker, Lieutenant A. F. Merewether of the Institute's Department of Meteorology.

May 21 found 29 members and their guests sitting down to supper in the Prospect Congregational Church, an exceptionally fine meal being served by the Ladies Aid. After supper the meeting adjourned to the transmitting station of Radio Station W1BX in Prospect, where all of the apparatus was explained to the Club by Mr. Warner, the station's engineer. Following the explanation of the transmitting equipment, everyone drove to Waterbury, where the studio was inspected and explained by Mr. Warner. This meeting proved to be a very popular one.

The last meeting of the year was the annual outing at Old Lyme, being a joint meeting with the Hartford Technology Club. This affair proved just as popular as in past years and everyone enjoyed the day immensely. There were swimming, baseball, tennis, golf, and archery, not to mention the fine dinner of steamed clams, steak, and all the fixings. Obie

Denison '11 was back with the gang after an absence of several years, and helped to pep up things considerably. — EARL L. KRALL '30, Secretary, 95 Park Street, New Haven, Conn.

Technology Club of Cincinnati

The local group took advantage of the presence of Edwin S. Burdell '20 in our vicinity on May 21 to hold a get-together. A number of our older members were somewhat surprised to have an announcement of a member of the Institute Staff as being a member of the Department of Economics and Social Science. How the place has changed since the olden days!!

Our meeting was arranged for in the private dining rooms of our new Union Railroad Terminal. How many of our other local clubs could or would have the temerity to hold a dinner meeting in a railroad station? It all becomes possible by having a real Tech man, Henry M. Waite '90, as the chief engineer of such an undertaking. Say what you will, it does not seem out of the way for a meeting of engineers and alleged engineers.

We turned out a crowd of about 35 fellows, including the fathers of four boys who are at present at the Institute. If Dr. Burdell could have come some other week, we could have doubled the attendance; but many of our local Tech men have an appreciation of music and the opening concert of the famous Cincinnati May Festival occurred on the same evening. Then again, many of our architectural members had to be in attendance at an important joint meeting of architectural societies.

The fact of the matter is, that those who missed this meeting failed to be in on a rather unusual Tech meeting. Dr. Burdell performed in a triple capacity: first, as a Tech man himself; second, as a member of the Faculty; and third, as a city planner, interested particularly in the economic and sociological aspects. He handled his remarks, therefore, under these three headings and was able to bring out a round-the-table discussion that lasted so long that he was forced to miss the larger part of an evening session of the convention which was his reason for being in Cincinnati.

We were very much pleased to have E. C. Wells '92 of Dayton and L. T. Cummings '12 of Connersville come over for the meeting. A. P. Mathews '92, our local President, was forced to admit that his fear and opposition to sociologists in the Faculty of the Institute had been dissipated by the sample we tried.

Technology lost one of its older Alumni in the death of Stephen H. Wilder '74 who passed away May 15, 1935, after an illness of several months. Mr. Wilder had retired from active business several years ago and spent much of his time in travel.

L. A. Gillett '19 has recently been placed at the head of the county welfare work here and has a large responsibility, of which, as usual, he is taking good care. — Fred W. Morrill '07 has been appointed assistant engineer and designer of the

Columbia Avenue-City Basin Boulevard and Viaduct project, a small thing of five to ten million dollars.

Do not forget to look in on our Tech lunch party each Tuesday at 12:30 in the Lounge Café, Hotel Gibson. — STUART R. MILLER '07, *Secretary*, 2210 Auburn Avenue, Mount Auburn, Cincinnati, Ohio.

Technology Club of New York

Last month the old timers at the Club held a testimonial dinner in honor of Alex Rice McKim '85, its founder and first president. The party was limited to those who knew Mac from the Gramercy Park days, when the Club began its existence as the first official M.I.T. alumni club. Here is a paragraph from the letters of invitation which Lester Gardner '98 sent out and which may give an indication of what a great time everybody had: "I shall try to find some dive which will permit the kind of jollification that such a gang will wish to have for Mac. Don't come unless you are prepared to subtract from 20 to 40 years from your dignity."

On April 25 the annual banquet was held at the Club's headquarters with President Compton, Gerard Swope '95, and Professor J. F. Norris of the Institute, as the principal speakers. More than 300 Alumni were present. President Compton reviewed the Institute's program during the depression and told of future plans. He expressed the belief that Technology would continue to hold its preëminent place among the educational institutions of the country, by virtue of the large research program which it has inaugurated.

Mr. Swope issued a call for younger men to serve on the Executive Committee and Corporation of the Institute. Asking his listeners to be on the lookout for Alumni showing exceptional qualities of leadership who could be recommended for these positions, Mr. Swope said: "We would like to have some young men on our board. We want the Executive Committee and the Corporation to reflect the ideas and ideals of men who know more about recent movements in engineering."

Alfred T. Glassett '20, President of the Club, acted as toastmaster. Technology songs and cheers resounded throughout the banquet hall all evening. Mr. Glassett told the members that the huge turnout was another indication of the great interest now being manifested in the Club and its activities.

During the winter, the Club held a very successful program of evening entertainments. They were very well attended, more than 200 people being present at every one. On March 14, Mr. E. E. Wyman, operating manager of the Pan American Airways, spoke at one of these entertainments and described the operations of intercontinental airways. He also told of his company's plans to span the Pacific and eventually the Atlantic on commercial schedules. On March 26 the members heard Mr. William Keplinger of the Carrier Corporation

explain in detail the latest developments in the field of air conditioning.

The placement bureau of the Club has been very active recently. Not only has it helped many to find jobs or make advantageous changes, but latest reports are that it has several attractive openings without qualified applicants.

Because of the interest being shown in the Club in the past few months, the board of governors has made available a special six months' introductory membership which is growing very popular. It is expected that the large increase of membership which the Club is now experiencing will soon enable it to expand its activities to their predepression level. — CONSTANTINE S. DADAKIS '34, *Publicity Committee*, 4 Lawrence Street, Mount Vernon, N. Y.

Technology Club of Central Florida

The annual meeting of the Club was held in Tampa, April 30, at El Boulevard Café. All the present officers were re-elected for the year 1935. Two interesting talks were given, one by Captain M. J. Mackler '17 on "Slum Clearance" and one by F. O. Adams '07 on the General Electric Company's "Architectural Contest for the Design of a Modern Home."

The following members attended: W. H. Mills '34, T. H. Skinner '92, W. B. Newell '17, M. J. Mackler '17, A. W. Higgins '01, Franklin O. Adams '07, A. C. Nichols '08, Fred D. Mendenhall '14, J. J. R. Bristow '14, Laurence P. Geer '15, Harvey M. Mansfield '83, M. R. McKinley '19. — MALCOLM R. MCKINLEY '19, *Secretary*, Tampa Electric Company, Tampa, Fla.

Technology Club of Schenectady

The Club assembled at a luncheon in the Y. W. C. A. in March, with 32 members and two guests present. The first of the guests, Gerard Swope '95, President of the General Electric Company, addressed the group, giving a brief résumé of the healthy condition of the Institute finances and of certain phases of its administration. He commented upon the successful operation of the Technology Loan Fund and the increases in the graduate student body. He commended the faculty additions made by President Compton and the extended activity of the Department of Physics.

B. S. Weaver '25, President, then called upon the second guest, Jerome C. Hunsaker '12 (Annapolis '08), who discussed, first, the curriculum revisions in the Department of Mechanical Engineering which are purposed to lay increased stress on fundamental theory. He then outlined the work of President Roosevelt's advisory committee on aviation, of which he and Professor W. H. Taylor are members, and discussed the economics of the industry and its problems. He treated, also, the current developmental aspects of airplane-motor design, in this country and abroad. — LEIGHTON R. RICKARDS '33, *Secretary*, International General Electric Company, Schenectady, N. Y.

M.I.T. Club of Western Pennsylvania

At its meeting on April 16, the Club had the pleasure of listening to a talk by Harvey O'Connor, famous for his book "Mellon's Millions" and for other writings on industrial and financial relations. His subject was "War and Fascism." His general theme was that our economy is one of intentional scarcity rather than one of intentional abundance as we should all like to think it is. He showed how this condition must inevitably lead us into either war or Fascism. His points were discussed with ardor after the meeting, but he stuck to his idea that we shall see a major war within five years.

The meeting was preceded, as usual, by a buffet supper at the University Club, with all the pleasure for the "inner man" that is thereby implied. Our Vice-President, Malcolm G. Davis '25, acted as toastmaster in the absence of our President, John T. Nichols '22. The quality of speakers being presented to us by our Program Committee has resulted in increasing attendance. The Alumni who do not attend are missing not only the intellectual treats but the good fellowship that goes with our meetings. — E. J. CASSELMAN '15, *Secretary*, Mellon Institute, Pittsburgh, Pa.

Technology Club of Panama

The Jordans lead a delightful life. For many years, rather regularly, they have been visiting the tropics, avoiding several months of Chicago's disagreeable winter weather. I have met them here several times in the past and I saw them again recently at a cocktail party, where Dr. Jordan informed me that he was a schoolmate of mine, having been graduated from M.I.T. in 1888, 47 years ago. The following is copied from the society columns of a local paper: "Dr. Edwin O. Jordan, of the Department of Bacteriology of the University of Chicago, and Mrs. Jordan, arrived Friday, March 22, aboard the S.S. *Veragua* from Jamaica. They sail Saturday for Tela, Honduras, where they will make a short visit, before returning to their home in Chicago." For the past month or two they have been living in Jamaica, renting a cottage just outside Kingston. They are very much interested in the tropics and apparently enjoy life immensely. A happy and contented couple! Mrs. Jordan does excellent drawings in pastel. I remember an exhibition of her drawings, a year or so ago, at the Gorgas Memorial Hall, Panama, and recall that they were well done and had the charm and spirit of the tropics.

Whenever the Dollar Liner, the *President Lincoln*, came through the Canal on its way around the world, I used to go down to the Balboa Docks, watch her come in, and visit her master, Captain Maynard Griffith. In the class notes for '14, in the March Review, I read of his death. Ever since I first met Griff in 1914 at Tech we have been close friends and I shall miss him, miss those enjoyable few hours in his company, on his ship and

ashore. Griff and I lived in the same house on Newbury Street in Boston; he had a small hall room while Ed Schoeppe '15 and I shared a large room on the top floor. Whenever Ed and I were *en charrette* working late and sometimes nearly all night (as, occasionally, architects have to do to get out their architectural "project"), Griff would come in and help us *poché*. Griff loved to *poché*, he got a great kick out of filling in wall areas with black ink. I shall always remember Griff. Whenever the *President Lincoln* comes slipping through the Canal, I shall be sad and sorry not to be able to see him again.

James P. Eder '34, one-time captain of the M.I.T. tennis team, has been making a name for himself, here, in tennis. Although defeated in the quarter finals for the Governor's Cup, played in Ancon, Canal Zone, by Blaum, leading Isthmian player for 1935, who won the finals and the Cup the following week, Eder fought every point and extended the champion to the limit. Blaum won 7-5, 7-5, only after one of the hardest fought tennis battles seen on the Isthmus. Lieutenant Clarence Renshaw '32 and Constant W. Chase, Jr., '34 were both eliminated the week before in the same tournament. The Governor's Cup Tournament is held every year, and all tennis players on the Isthmus may compete. It was first put up by Panama Canal Governor Harding, an ardent tennis player, some 15 years ago. Now General Harding has retired, he is in Paris, painting, emulating his famous ancestor, Chester Harding, early American portrait painter. Since Harding's time, every governor has fostered the Governor's Cup Tournament. When Eder gets more acclimated and gets used to the Canal Zone concrete courts, he will be even better than he is now, although he is rated already as one of the best players on the Isthmus.

At this writing, Admiral Byrd is on the Isthmus, stopping at the Hotel Tivoli, Ancon. He arrived a few days ago and is to sail for the States in the near future, after a short visit to Costa Rica. I suppose he must enjoy the mild, comfortable climate of the tropics after his long, long sojourn in the Antarctic.

I had an interesting visit from Ray J. Barber '06, III, a hydraulic mining and dredging engineer from San Francisco. He left April 2, by airplane, for Buenaventura and Tumaco, and expected to be in Colombia about a month, exploring wild regions, looking for gold. He was searching for khaki riding trousers when I saw him, and we could find none ready made in Panama or the Canal Zone. Major Covell '23 came to his rescue, and supplied him with a pair of his own. I have heard the expression "wearing another man's shoes" but this is the first time I have ever heard of going exploring in another man's pants. Since the Isthmus has become so civilized, we have abandoned horses and taken to automobiles. We no longer see mounted draftsmen and mounted clerks in Canal Zone offices. A launch will meet Barber at Tumaco and take him to the head of navigation. Although he speaks Spanish himself, he

has with him a native of Colombia, who knows the wild country above the head of navigation, to act as interpreter and guide. This is real romance and adventure.

From a local paper comes the following: "Lieutenant Colonel Frank D. Applin ('10), Signal Corps, Quarry Heights, is relieved from duty in this department, effective June 30, 1935, and is detailed for duty with the Organized Reserves, 9th Corps Area, San Francisco. He is authorized to leave the department on May 3 and is granted leave of absence for one month and 18 days."

Locusts are here again. They seem to come regularly about this time every year. They come by the thousands, settle on trees and on the screens of our porches, and, just at dusk, start their terrible, raucous, ear-splitting, loud, metallic, continuous din. The noise they make is most disagreeable and maddening, and sounds like the noise made by a big circular saw ripping through hard planks. They stop when it gets dark. Fortunately, in view of this, darkness descends quickly; twilight is of short duration in the tropical zone.

Major Covell informs me that the following 1935 graduates sailed from New York on July 2 under contract to work for the Panama Canal for one year: Donald C. Gutleben, George C. Dunlap, Richard R. Brown, Ernest K. Dockstader, and Nelson H. Thorp. We shall try to give them a right royal welcome. Chase '34 tells me that Dunlap was in the honor group all last year and gets his master's degree this year, and that all five have high scholastic standing.

Interesting '34 class notes have been appearing regularly in The Review over the name of Robert C. Becker, General Secretary. From the January number we learn that he has been selling toys at Macy's, but hoped "... by the time you read your Review to be on my way to South America." On April 13, Earl K. Murphy '34, Gatun, telephoned Constant W. Chase, Jr. '34 of Balboa Heights, that Becker was on the S.S. *Santa Barbara* on the way through the Canal. The night before, ably assisted by John Carey '34 and James P. Eder '34, Murphy had had Becker in tow and had taken him to every dive and dump in Cristobal. Chase (Constantine the Great) with Malcolm S. Stevens '34 and Kenneth F. Ryder '34, met Becker when the *Santa Barbara* reached Balboa about 11 p.m., and for the two hours before Becker's ship sailed for South America, they made the rounds of Panama's cabarets, drinking gardens, and other amusement places. Becker's girl friend, a fellow passenger stopping over to visit the Isthmus, went along and added to the enjoyment of the evening. A charming, lovely, girl, so Chase tells me. I don't know how Becker will like hearing that she already has five dates, all with the five classmates who entertained him here. Becker is going to work for a mining concern and assist in increasing the world's supply of tin, lead, and silver, and his address will be: in care of Compania Huanchaca de Bolivia, Puncayo, Bolivia. From my own experience in Bolivia, 24 years ago, I know Becker

will have lots of adventures, and I hope and expect that the class notes for '34 will contain some interesting letters from him.

After three months without rain, rather suddenly, on the 29th of April, black clouds covered the sky and a heavy downpour deluged Balboa, Ancon, and Panama, the Pacific end of the Canal, giving the first indication that the rainy season had started.

Twenty-three years ago I had a trip through Italy, Germany, and France, the money and the time for the trip made available as the result of a vacation clause in a contract I had with the "Estrada de Ferro, Madeira-Mamoré," Brazil, the company employing me at that time. Italy was at war with Turkey and sending troops to Tripoli, I believe. I saw a ship, sardine-packed with healthy, huzzahing warriors, depart in a blaze of glory across the bay of Naples. A hospital ship came in one day, disgorged soldiers injured, sick, and on leave, and I was battered by the crowd of excited people which surged down to the waterfront to greet the worn, tired, disordered, returning heroes.

I have been allowed leave for a nice long vacation, the first one in seven years, and my ticket to Europe has been arranged and paid. The steamer I am taking is the *Caribia*, of the Hamburg-American Line, leaving Cristobal on May 29 and due in Hamburg on June 18, after stopping at Cartagena, Puerto Colombia (Barranquilla), Curaçao, Puerto Cabello, La Guayra (Caracas), Trinidad, Barbados, Santander, Plymouth, Havre, and Amsterdam. While in Europe my headquarters will be in Detmold, in Lippe, Germany, Hermannstrasse 43, in care of Herr Theodor Lieban, and I hope to visit German university towns, especially Göttingen and Heidelberg where my father studied medicine, over 67 years ago. I hope also to visit London and Paris. My leave is 120 days. I return from Hamburg, leaving on the *Portland*, September 6, sailing directly back to the Canal Zone, due in Cristobal the 23rd of September. — MEADE BOLTON '16, *President*, Box 23, Balboa Heights, Canal Zone.

Technology Club of Lower Ontario

Following the reorganization meeting of the Club on February 19, a dinner meeting was held at the Granite Club, Toronto, on May 9. Twenty turned out from this city to enjoy a most enthusiastic get-together.

The day before our meeting, we learned that there were eight Alumni at Hamilton and Port Credit, nearby localities. Unfortunately, it was too late for any of these to make plans to attend, but interest in our future gatherings has been assured us.

After the usual business was concluded, the Technology film and the Edgerton high-speed film were shown for the first time in Canada. The Club was fortunate in having H. H. Tozier '96, Vice-President of Canadian Kodak Company, take charge of this part of the evening's entertainment, and as he had posted himself thor-

oughly beforehand on the subject matter, he was able to explain the films in a most interesting manner as they were projected. All present felt that the pictures were far beyond their expectations. Very few had been back to the Institute recently, and some not since graduation, years ago. We all carried away with us a new inspiration concerning the opportunities afforded for educational training and development at Technology, and increased enthusiasm for its accomplishments.

William West, Jr., son of William West '99, attended the meeting with his father, as he intends entering Technology this fall. William, Jr., now has a better idea of what to expect on arrival in Cambridge. We were also advised by Harry Chandler '08 that he is planning to send his son, Stuart, to the Institute this fall.

A high light of our meeting was a talk by Mr. Tozier on the latest developments in movie color photography, and some splendid films were shown, indicative of what is in store for us.

The Club decided to hold a golf tournament and smoker later in the summer. — Those present were: John Buss '26, Harry Chandler '08, Albert King '32, Bernard Morash '12, Harry Patten '08, Charles Sampson '29, Osborne Shenhstone '11, Henry Tozier '96, Edward Woodworth '97, Thomas Gledhill '26, John Keenan '23, Ross Lord '32, William West '99, Valentine Wilson '28, Louis Black '14, Carroll Harding '29, Archibald Holmes '00, David Johnston '26, Massey Williams '27. — BERNARD H. MORASH '12, *Secretary*, United-Carr Fastener Company of Canada, Ltd., 137 Wellington Street West, Toronto, Ont.

Indiana Association of the M.I.T.

Friday evening, May 17, the Association met for dinner at the Indianapolis Athletic Club. The principal occasion for the meeting was the showing of the Edgerton high-speed photographs which had been obtained by our genial President, J. Lloyd Wayne '96. Twelve of our most active members were present. John A. Sauers '23 came down from Purdue University at Lafayette to be with us.

The Edgerton movies were intensely interesting. As the films were a bit short for an entire evening's entertainment, Howard S. Morse '03, who directs the destiny of the Indianapolis Water Company, brought with him as a guest a Mr. Hamilton, also of the Indianapolis Water Company, who gave an interesting talk illustrated by a very complete and excellent moving picture covering practically the entire activity of the Water Company and its services in providing this very necessary "product" to the citizens of Indianapolis.

We missed our old friend, Wilson B. Parker '88, who ordinarily never misses one of our meetings. This time, however, he was at the Methodist Hospital, having been hurried there a few days previously for a serious operation. Fortunately, Mr. Parker came through it all nicely and is doing extremely well, although he is bored to death by being confined to the

hospital. Flowers and best wishes for a speedy recovery were sent to him by the Association. — EDWIN M. McNALLY '18, *Secretary*, The Barbasol Company, P. O. Box 1178, Indianapolis, Ind.

Technology Alumni in Lehigh Valley

In recent years the number of M.I.T. Alumni in the vicinity of Easton, Pa., has increased until at present at least 20 are known to be located here. No previous organization had existed and it remained for Wallace Newcomb '26 and Edward Rand '34, of Ingersoll-Rand Company, Phillipsburg, N. J., to promote a meeting. The result was an informal dinner, held on March 26. The object was to bring together as many as possible of the local Tech men to organize into a Lehigh Valley Technology Club. Fourteen men were expected at the dinner. However, only ten were able to be present. No speeches graced the festive board, but stories of Tech life were recounted and Technology songs rang out tunelessly (?). Several rounds of beer served to improve the music considerably. Although no formal business was transacted, a tentative organization was established.

Wallace Newcomb was chosen to act as corresponding secretary for the purpose of contacting other Alumni in the district. Another meeting and dinner has been scheduled for some time in June. Any Tech men near Easton who have not yet heard of these activities are urged to get in touch with Wallace K. Newcomb, 158 Parker Avenue, Easton, Pa.

Those present were: W. K. Newcomb '26, J. L. Ostborg '26, L. W. Day '27, J. E. Bourne '28, P. A. Lamb '29, J. G. Cree '32, F. B. Hoyle, Jr. '32, I. E. Madson '33, R. C. Rogers '33, D. M. Stewart '33.

CLASS NOTES

1873

As this goes to press, the Class plans to hold its sixty-fifth annual meeting at a lunch on June 3 at Walker Memorial. At least five of the 11 members of the class association will be present. — GEORGE M. TOMPSON, *Secretary*, 8 Whittemore Terrace, Wakefield, Mass.

1875

The Class held its 53rd consecutive annual meeting on May 25, 1935, at a lunch at the Engineers' Club, Boston. Of the six members who had signified their intention to be present, only four appeared. Prentiss wired that owing to a funeral that afternoon he felt obliged to give up his engagement, and Atkinson, for some unknown reason, did not appear. That left the company to consist of Dorr of Dorchester, Eddy of Fall River, Lyman of Northampton, and Hibbard of Milton. The combined ages of the four faithful is 325 years, or an average of 81¼ years.

After lunch a short formal meeting followed. The rest of the afternoon was devoted to sociality during which not

only were the affairs of Technology discussed but those of state and nation. Letters or greetings from 11 members of '75. (New directory list, 38.)

Libby writes that he has not been in good form the past winter but is now gaining his former strength. He enclosed a snapshot of himself, sighting through an antique theodolite of English make, and it was appreciated. Best wishes for our 87-year-old class Patriarch! Bush says he enjoys his present home in Orlando, Fla., but he is looking forward to his former home in St. Louis this summer. — Prentiss recently returned from his winter home in Florida to Holyoke. Sorry that we couldn't have had him with us as he intended. — Cabot is back in his old home in Weehawken, N. J., after many trips abroad. — As Libby writes, quoting from Hamlet: "Age with his stealing steps hath seized me in his clutch." And it is all too true of '75, but as long as there are two to meet we shall carry on. — THOMAS HIBBARD, *Secretary*, 4 Ridge Road, Milton, Mass.

1885

Just on the eve of our Fiftieth Anniversary, the Class has been dealt a triple blow by the sudden deaths of three of its most beloved members — Tracy Lyon on April 28, one week later (May 5) Jim Means, and with another interval of a week (May 12), Artie Plaisted.

Tracy Lyon had not been in the best of health for several months. He was taken down with pneumonia and lived but three days. Tracy was the baby of the Class and was always a great favorite. Among his life interests, his associations with the Institute and the Class of '85 ranked high, and he was always with us at our celebrations. Soon after his graduation, he became connected with the Chicago, Great Western Railway, and in a short time had become assistant general manager of the road. During this connection he developed a great interest in a young employee, Walter P. Chrysler, and his advice and encouragement were of much assistance at the beginning of Mr. Chrysler's successful career. He never forgot Tracy's friendship and at about the time Tracy was tempted to retire, Mr. Chrysler persuaded him to take an office next to his and act as chief engineering adviser to the Chrysler Company.

In 1906 Mr. Lyon became assistant to his old friend, Edwin M. Herr, President of Westinghouse Electric and Manufacturing Company at Pittsburgh, and in 1911 he went to Detroit as director of production of the General Motors Company. He came to New York in 1926 and lived at 120 East 75th Street. — Mr. Lyon is survived by his widow, Frances de Sausure Gilbert Lyon of New York and Gilbertsville, N. Y.; two daughters, Mrs. Sherman Post Haight of New York and Mrs. Howard Calvin Sykes of Englewood, N. J., and a son, Robert Gilbert Lyon of New York.

The shock of Tracy's loss had hardly registered on our benumbed senses when we learned of the death of Jim Means at

1885 Continued

his home in Manchester, Mass. Jim has had to take good care of himself for several years, but he had missed only one meeting with the Class during that time and was looking forward to meeting us in June, when suddenly the end came. Jim was the most companionable of men. He was of a retiring nature and his circle was more restricted than most, but to those who came within it, he was a star. No class reunion was complete without him and he was always the same old Jim as in the choice associations of our student days. He studied architecture and for several years was a practising architect. Later he became associated with his father, who was engaged in business in New Hampshire. For many years he was actively identified with Trinity Church in Boston. He leaves a widow, Mrs. Agnes Bankson Means; a daughter, Mrs. J. B. W. Waller, Annapolis, Md.; and two sons, Lloyd Bankson Means, San Francisco, Calif., and James McG. Means of Manchester.

The passing of Artie Plaisted was almost without warning. Only a few days before, we had talked with him on the telephone and he was arranging to go with us to Wellfleet. When he retired as engineer of the Metropolitan District Commission, two or three years ago, his physical condition did not allow him to go about much, although he never missed a meeting of his Class. Wherever '85 was and whatever '85 did, Artie was always there. He had been connected with the M.D.C. since 1910 and before that he had worked with the Charles River Basin Commission. He was a member of the Soley Lodge of Masons of Somerville, the Somerville Royal Arch chapter, and the De Molay Commandery, Knights Templars.

These three comrades who have left us are typical of the spirit of '85; each entirely different from the other in temperament, personality, taste, and life work, but each in his own way contributing to the reputation of our Class and joining unitedly in its varied efforts to advance the interests of the great institution whose sons they were proud to be. — ISAAC W. LITCHFIELD, *Secretary*, 163 Franklin Street, Quincy, Mass.

1887

George Otis Draper writes that he is taking up a residence in California, but intends to attend the class reunions just the same. W. B. Blake and W. R. Thomas have returned from a winter's sojourn at St. Petersburg, Fla., to their Massachusetts homes, where they are located at 14 Summit Place, Newburyport, and 183 Bartlett Avenue, Pittsfield, respectively. President and Mrs. Giles Taintor gave an afternoon tea at their residence, 120 Brattle Street, Cambridge, on Friday, May 17, to the members of the Class, in honor of Miss Frances Wilson Sprague, whose brother, Timothy W. Sprague, was a popular member of the Class.

The Class is indebted to Professors A. A. Noyes and A. H. Gill for the following article on our late classmate, Greenleaf R. Tucker.

... "Greenleaf Robinson Tucker died in Boston, January 8, 1935. He was born June 13, 1856, in Eastport, Maine. His first important professional work was as chief pharmacist and chemist for 20 years at the Boston City Hospital, where he developed many original pharmaceutical methods. He took the Bachelor's degree in chemistry at the M.I.T. in 1887, and specialized in Sanitary Science and Bacteriology under Dr. Ellen H. Richards and Professor William T. Sedgwick. He devised, with the latter, the aerobioscope for collecting the bacteria from samples of air by filtration through sand or sugar, and published articles on the method. Later, for nine years (1890-99), he was Professor of General and Pharmaceutical Chemistry at the Massachusetts College of Pharmacy and also at the Boston Dental College. During the last 25 years of his life he acted as a consulting chemist, specializing in lacquers and enamels for cloth, leather, and other purposes; and it was in this colloid field of applied chemistry that his chief contributions were made.

"He was a member of the American Chemical Society and of the Technology, University, and Yacht Clubs of Boston. Yachting was his main recreation. Tucker was a man of broad interests and of the highest ideals and sterling character." — NATHANIEL T. VERY, *Secretary*, 14 Currier Road, Lynn, Mass.

1888

Charles A. Stone, Chairman of the Board, Stone and Webster, Inc., was one of the speakers at the testimonial luncheon after the symposium in celebration of the Semi-Centennial of the granting of the first degree in Electrical Engineering at Technology on June 3, Alumni Day.

Among those expected to be present at the Alumni Day Festival are Bates, Bridges '89, Buttolph, Collins, Cole, Conner, Faunce, Fuller, Horn, Hamblet, Mead, Reynolds, Runkle, Sawyer, Sjöström, Stone, Thompson, Webster, Williams, and Wood. Besler was unable to come on account of a previous engagement. Jordan, of Chicago University, is uncertain, but he, together with Foque, Quigley, and a host of others, is making plans to descend on Boston and the "point on the salt water" where the "glorious" Class of '88 will make "hoopee" and all that sort of thing, in celebration of the day 50 years before 1938 when they went forth from Rogers on Boylston Street to seek their fortune in this cold, cold world. There "will be a hot time in the old town of Boston," as well as on the seacoast, in June, 1938, you can safely wager your last dollar.

The annual meeting of the Massachusetts Horticultural Society reelected President Edwin S. Webster, as usual, who stated in his annual message that the membership had reached 8,325, the largest in the history of the Society and almost twice that of any similar organization in the country. Ned has recently returned from a trip to Vancouver and the Northwest.

Joseph Cooke Smith is now residing in London after living in Chalet des Terrasses, Champéry, Valais, Switzerland, since the World War. Wilson B. Parker, one of our very successful mid-western architects, is now residing at 5825 Guilford Avenue, Indianapolis, Ind. Another of our architects, Howland S. Chandler, is living in Noyes Park, Needham, Mass. We understand that our old football hero, Frank M. Ladd, 1124 Josephine Street, Denver, Colo., has recently switched from the gold to the silver standard, but you may be sure that Frank will emerge from the scrimmage with the ball and his share of any metal mined in Colorado. Prexy Alfred Sawyer maintains his fighting weight at about 220 pounds by canoeing, tennis, and chopping trees, as well as doing the major part in beautifying and maintaining his wonderful estate on the Concord River in Concord. Ben Buttolph has just returned from his annual trip to Chicago and the Middle West. Theodore Foque's present address is Northome Beach, Wayzata, Minn. It sounds very attractive. Smoky Joe Wood sojourned in the South this winter as usual. If Sanford Thompson will drop in on us at Chebeague Island this summer, I will introduce him to "the lady on the tee" and her entirely correct method of hitting a golf ball. Yes, Luther Bridges, on May 1, when I took my first plunge in Casco Bay for the season, the water was 49° Fahrenheit and the air 44°, showing that we have warmer water than air. If you do not believe it, come down and try it. — BERTRAND R. T. COLLINS, *Secretary*, Chebeague Island, Maine.

1889

Eleven classmates came to the annual dinner on March 25: Bridges, E. V. French, H. French, Hobbs, Kilham, Laws, Orrok, Pearson, W. L. Smith, Thurber, and Wales. As a result of the postal-card vote, the next dinner may be held in June, 1936, instead of March, as that date, on the whole, seems to be more favored.

Hobbs took exception to the Secretary's remarks in the last set of class notes about his being the only member running a car last winter, said that as a matter of fact he came to the Alumni Dinner by subway himself, and hoofed it down the Esplanade, ice and all. Implied that the rest of his classmates were a sandless lot. Well, Frank usually is one up on most of us anyway.

Another letter has come from Lewis, which makes the Secretary more envious than ever. Here it is: "Here I am in Denver after looking over New Mexico, Arizona, California, Nevada, Utah, and Wyoming. We have stopped frequently and stayed as long as our interest kept up. So we have not tired ourselves and feel fine up to date. We shall start home next week, I expect. Our trip across from Denver to New York will be made with few, if any, sight-seeing stops. At New York we shall visit our daughter about a week and plan to reach Boston, June 1, Saturday. Just now we are seeing the

1889 Continued

Rocky Mountains. Tonight we are staying in a camp, a little away from Denver, at elevation 7,900 feet. We have been up 11,000 feet in deep snow all about. The high mountains are covered with heavy snow, more than for the last few years. They look very handsome in the bright sunlight. We have been into the Yosemite and seen the beautiful waterfalls. We have seen the Mariposa and Sequoia groves of big trees. They are certainly handsome and inspiring to see. At the opposite end, we saw Death Valley where there is nothing growing. At one place the valley is 289 feet below the sea. The contrasts are very marked. In California everything was green and the flowers beautiful. As soon as you start east you run into the deserts. Then, you run for miles across plains and suddenly come to the high mountains. We had a very interesting stay at Boulder City and saw the dam both inside and out. The dam proper is almost finished but much work remains about the power house. The whole situation is very interesting. Well, I think old New England will look good to us, although we have seen many beautiful places. We have been gone since January 17 and so far have been over 13,400 miles." — Charles R. LaRose died on January 21 last. The Secretary has no particulars at present. — WALTER H. KILHAM, *Secretary*, 126 Newbury Street, Boston, Mass.

1890

The Class held its Forty-Fifth Reunion, at the New Ocean House, Swampscott, on Sunday, June 2, and was attended by the following members and ladies: Lenfest, de Lancey and wife, Sherman and Mrs. Coe, Noyes, Voorhees and wife, Kendall and wife, Crane, Burley and wife, Gilmore and wife, Goodwin and wife, Packard and wife, Miss Bragg, Wason and wife, Rogers and wife, Horton, wife and daughter, White and wife, Swanton. The following sent regrets at being unable to be present: Hayden, Roots, Hale, Miss Molineux, Clark, Waite, Carney, Spaulding, Walker, and Pope.

Dr. Franklin White and Mrs. White invited us all to dine with them at the Eastern Yacht Club, as their summer home is at Marblehead, only four miles away.

George A. Packard was unanimously elected to act as Secretary, to assist Gilmore when necessary. — GEORGE L. GILMORE, *Secretary*, 57 Hancock Street, Lexington, Mass. GEORGE A. PACKARD, *Assistant Secretary*, 50 Congress Street, Boston, Mass.

1891

Notice has been sent out for a class outing at Aiken Manor, Webster Lake, N. H., for June 22 and 23. It will probably be all over before you read this and I will tell you about it in the next Review. During May Charlie Aiken and his wife stopped in Boston at their daughter's, and had dinner with the Fiskes. They were on their way to their summer home.

Dana, Blair, and Fiske attended the annual convention of the National Fire Protection Association in Atlanta, the

middle of May. Fiske and Dana are on a number of committees of this Association and have both been active in this work for many years. Blair is still with the Philadelphia Contributionship, the oldest fire insurance company in the United States, organized in 1752.

Nice letters from Billy Dart and Fred Moore acknowledge birthday cards from Barney.

Will Leland writes from Berkeley, Calif.: "I had a nice little visit with Jim Swan. He came into the office one day, and it was good for sore eyes to see him. He is just the same as ever but, like us all, a little thin and white on top. He spent a couple of days in Yosemite and last Friday Mrs. Leland went over to San Francisco and we three had lunch together and a good talk about times past and present.

"I almost never see any of the boys, except once in a coon's age I see Hersam. While he is at the University of California as well as I, he is in the Mining Building and I am in the Architectural only from eight to nine, three days a week, so I am on my way to San Francisco before many of the others are out. I seldom get as far as Los Angeles so do not have a chance to see the boys there. Wish I could get back East for a visit, but it doesn't seem likely now. Was back four years ago for a hurried trip to New York and Washington, but did not touch Boston. — Be sure to give my best regards to all the boys."

The following is taken from the Los Angeles *Times* of April 21, 1935: "Pacific Coast shipbuilders must be granted a construction-cost differential over Atlantic Coast yards if they are to have any opportunity of securing future contracts for either commercial or naval construction.

"That declaration was made at the port yesterday by a distinguished North Atlantic shipbuilder, James Swan, noted naval architect and long-time technical adviser of the New York Shipbuilding Company, who arrived from New York aboard the Panama-Pacific flagship *Pennsylvania*.

"The American merchant marine is so sadly in need of new freight, oil, and passenger ships that the situation will soon become critical, unless Congress launches an embracing program of definite, permanent aid to our shipping, both in construction and operating subsidies," he declared. "Equally vital, to my mind, is the need for legislation enabling Pacific Coast shipyards, far distant from steel-production centers, to compete on equal basis with East Coast yards on future contracts. We should preserve the West Coast yards at all costs, first as a measure of national defense, next as an economic safeguard. At present the North Atlantic Coast shipbuilding industry is being kept alive only by naval programs. One tanker for the Socony-Vacuum Oil Company is today the only large ocean-going commercial vessel now building in American shipyards. Something must be done at once if the American flag is to remain a factor in world trade."

"Swan, a graduate of M.I.T. and Glasgow University in naval architecture, started his shipbuilding career with the Bath (Me.) Iron Works in 1893 and in 1900 directed building of the New York Shipbuilding Company's first ship, the freighter *M. S. Dollar*, nucleus of the present great Dollar fleet. — Swan will spend an extended vacation here with his daughter, Katherine Swan, of Hollywood."

At last accounts, Harry Young was about through with his broken leg and hospital experience and should be home again before you read this. — Francis Holmes was at Summerville, S. C., for part of April. He stayed at Pine Forrest Inn. Azaleas, dogwood, and roses, a beautiful time of year in the "Sunny" South! Later he went to Sea Island on the Georgia coast.

Steve Bowen and the Secretary both took the West Indies cruise on the *Reliance*, but not together. Steve left in February and got back a day before I left on March 19. We haven't compared notes, as yet, but my trip was most interesting, 100% perfect, with a fine boat and beautiful weather. Steve has been most everywhere, but this was my first West Indies Cruise and I enjoyed it all immensely. These cruises of about three weeks give time enough to get used to the boat and it is a grand change and rest for the "tired business man," of whom there were several on board. We stopped at Saint Thomas, Trinidad, Grenada, La Guaira, Caracas, Curaçao, Panama Canal, Jamaica, Haiti, and Nassau. Life and conditions in these islands vary considerably; Haiti is the most primitive and Jamaica the most beautiful, although Grenada is also a beauty spot. The Castleton Gardens at Jamaica were unusually interesting with a great variety of tropical trees, fruits, and flowers. We enjoyed sunshine, warm weather, always a cool breeze, calm water, moonlight nights — what more can be desired?

Charlie Garrison writes of his trip to Berkeley: "The evening before we left Berkeley, Ernest Hersam called for the three of us and drove us carefully to his mountain home. We ascended by Prospect Street, a little above the town, where we turned into the mountain road, aptly called panoramic. It zigzags in three parts, two zigs and one zag. The zag connects the zigs by a pair of nice hairpin turns. We then went straight up the mountain at an angle slightly off the vertical! You can use the pole star for a sight and put on full steam until you come to the end of the road and roll right into Ernest's garage with the house overhead. It takes neat navigation at the hairpins as they are figured for a clearance of about three eighths of an inch beyond the turning radius of the car. Ernest has this down pat, but others have left their mark on the curved parapet.

"We were warmly welcomed by Mrs. Hersam and spent a delightful evening with them. The view at night is remarkably fine as one can see the continuous lights of several cities from Oakland to Richmond and across the bay to San

1891 Continued

Francisco. We even look down upon the constellations as they set. Orion made a nose dive while we were there. Our hosts returned us safely to our hotel where we bade them adieu. We have a friend who runs a famous restaurant near the college gate, 'The Black Sheep' (the restaurant not the friend). She gave us the most delicious food, and her place is crowded with professors and students. She insisted on our being her guests for the week we were in Berkeley. We had pleasant rooms in the Berkeley Inn and before we left we had settled Marg in a nice apartment house nearby.

"We had tickets to the Charter Day exercises in the Greek theater and heard Secretary Perkins give the address and get her degree. This was followed by degrees conferred upon Jane Addams, Herbert Hoover, and the keeper of the college archives.

"We left Berkeley on Wednesday, March 27, on a fair day (there have been few in California this winter) and crossed to the Valley road. We made the trip to Bakersfield in a streamline De Soto. We lunched, or rather souped, in Fresno (just a plate of soup), arrived at Bakersfield at three, and went to a very good camp (Motel Inn). We were in the land of flowers. Not for years has the display approached this one. As it was early, we retraced our steps for about eight miles and turned into a meadow with several hundred acres of flowers of many varieties and colors. We could walk in them and feel a part of them. . . . Next morning we went to Arvin, toward the desert, where we saw great fields — acres and acres of lupine, poppies, or coreopsis, or of several kinds together — with snow-sprinkled mountains in the background. The finest show was south of Bakersfield just at the foot of the Grapevine Grade, before crossing the mountain range. Here we saw the mountains stretching away to the west, their sides covered with vivid patches of color. Below in the valley was a carpet, like Joseph's coat of many colors, as far as the eye could reach.

"Bob has just been chosen one of six petroleum engineers (from 100) to suggest the proper amount of oil production for each well in California."

The following is taken from two recent letters from George Hooper: "The Rose Parade has come to be an immense thing and the floats so large that two truck bodies are needed to carry one of them; in fact, the weight of the winning float this year was so great that a cast-steel truck wheel broke under it, and the float had to be taken out after covering only part of the route.

"The football game was a real game but the Stanford team had no chance against the Alabamians, whose tactics and formation were of a superior order. The southerners rather spoiled their welcome, however, by refusing to allow the Junior College Band to play in the Bowl until several negro bandmen had been removed from it. — We had our usual open house luncheon and punch and about 40 of our friends came in.

"The rest of the winter has been without startling events. We have had more than an average rainfall so that plenty of water is assured for the rest of the year. This also has brought out all vegetation so that the mountains are covered with growth and the wild-flower display, now coming to an end, is very beautiful.

"Mrs. Hooper and I started early in February for a motor trip up the Coast, intending to reach Monterey. We met such stormy weather, however, that we turned back when half way and stopped at Santa Maria and at Santa Barbara.

"About two weeks ago, we made another trip, about 350 miles in all, to the southern end of the San Joaquin Valley. Here is a great area, at least 50 by 100 miles, in which wild flowers grow in great profusion and variety. This year the display was exceptionally fine, due to the large amount of rain which the winter afforded. On the lower, flatter hills which had been eroded in parallel lines, it appeared as though immense *porrières* had been thrown over them. We spent the night in Bakersfield and returned via the Tehachapi route, a part of which lies above the snow line.

"Kern County . . . is a mine of heavy chemicals of the alkali type, borax being particularly noticeable. Wilder would understand this. One borax deposit was discovered through the prosaic process of well digging for a ranch water supply. At a short distance below the surface the diggers thought that they had discovered a mine of glass, as they penetrated a sheet of rasorite, a borax salt, which is practically transparent. This deposit is now one of the country's main supplies of borax and its compounds.

"We are all well and all together at home, or nearby. Our married daughter is living but two blocks away. Our younger daughter has attended a local business college all winter, feeling that such practical training is a useful part of the education of a modern girl.

"I see by the latest Review that Charley Garrison and I are covering nearly similar ground in our letters. I also am interested in the new shore highway terminating in the north at Carmel, near Monterey. I have driven up some 60-odd miles from the south end, while he has explored from the north. I wonder which of us will be the first to cover the whole distance."

George and Mrs. Holmes, Rowland and Mrs. Barnes, Gorham and Mrs. Dana, Charlie and Mrs. Aiken, and Mrs. Fiske were recent visitors to Cohasset to see Barney.

Will Wilder has been reelected to serve as Class Representative on the Alumni Council. — Francis Holmes has been elected as Representative at Large on the Council. — The Secretary continues for another year as a member of the Alumni Nominating Committee.

The following new addresses have been received: William Punched, 11 Harding Avenue, Belmont, Mass.; George W. Chickering, 44 Brantwood Road, Arlington, Mass.; Miss Ida T. Weeks, Bradford, Vt. — HENRY A. FISKE, Secretary, Grin-

nell Company, Inc., 260 West Exchange Street, Providence, R. I. BARNARD CAPEN, Assistant Secretary, The Early Convalescent Home, Cohasset, Mass.

1893

Miss Katharine Baxter, daughter of Jesse B. Baxter '93 and Mrs. Baxter, of Milton, Mass., made her *début* as a concert pianist in Town Hall, New York City, on Sunday, March 31, 1935. Among the many cordial press notices of the event, that of the New York Times stated: "The youthful recitalist was not long in establishing that she has cultivated her gifts assiduously and that back of a creditable technical facility is musicianship, musical feeling, and a sense of style." Miss Baxter's first Boston recital was given in Jordan Hall on April 23. Her entire training has been received in this country. For the past five years she has studied with Mary Boxall Boyd.

That the Class is not without musical talent is exemplified by John S. Codman who, notwithstanding the demands of a business career and an unusually active interest in public affairs, has made music his chief avocation. He is a baritone singer of rare talent. His musical studies, begun in Boston, were continued under the preceptorship of famous masters in London and Florence. In 1899 he first appeared as a public singer at a recital in Boston, and ever since has sung frequently at public and private functions. He has favored the Class on several occasions, notably at the Fortieth Reunion at the Essex County Club, two years ago, when the rich quality of his voice was at its best. His latest appearance was at a private recital on May 12, this year, at the home of Mrs. Henry B. Cabot on Heath Street, Brookline.

Herbert N. Dawes, who for years was associated with Nightingale and Childs, Inc., dealers in insulation materials, of which company he became President and Treasurer, has recently joined the Ehret Magnesia Manufacturing Company of Valley Forge, Pa., manufacturers of insulating materials and asbestos products, as consultant on insulation. His headquarters, however, are with Nightingale and Childs, Inc., at 245 Fifth Street, Cambridge, Mass.

Charles G. Waitt, who, since his retirement from the insurance business some years ago, spends most of his time in Continental Europe as special correspondent of the London Times and other English and American newspapers, paid a flying, semi-annual visit this spring to his home in Brookline, arriving at New York on the *Europa*, April 12, and sailing again on the *Bremen* eight days later. After a short stay in London, he planned to go to Germany, Danzig, and then to the Balkan States where, with the present unrest in Europe, doubtless he will find plenty of material for his writings. His letters to the Class Secretary are most interesting reading.

This spring the Class has suffered the loss, by death, of three of its members, Arthur Moody, Harry L. Clapp, and Frank Houghton. Arthur Monroe Moody,

1893 Continued

64 years of age, died at his winter home, Palm Beach, Fla., on March 2, 1935, following a heart attack. For many months he had been in ill health, which necessitated his leaving his Boston home for Florida last fall. Arthur Moody was one of that numerous group of Newburyport men who entered Tech in 1889, and for many years after leaving the Institute in 1892 he continued to live in Newburyport. He began his business career in the employ of B. S. Snow and Company of Boston and after several years he became connected with the Wetmore-Savage Company, dealers in electrical supplies, in which concern he became Assistant Treasurer and a director. For the past 10 years he had been Treasurer and a director of the Alemite Company of New England, and had held directorships in other corporations. He was fond of sports and an enthusiastic yachtsman. His widow and two sons survive him.

Harry Lincoln Clapp, of Chicago, died April 16, 1935. His Technology training was the foundation for a life-long career in patent law. Shortly after his graduation in the Chemical Engineering course, he entered the United States Patent Office at Washington, D. C. While holding the position of patent examiner he attended, evenings, the Columbian Law School, receiving the degrees of LL.B. in 1896, LL.M. in 1897, and Master of Patent Law in 1898. In 1900 he went to Chicago and became associated with the firm of Pierce and Fisher, engaged in the practice of patent and trade-mark law exclusively. After a few years he was admitted to partnership and later the firm name became Fisher, Towle, Clapp and Soans. He was a member of the Phi Delta Phi (legal fraternity) and Delta Upsilon. In 1902 he married Miss Louise Grant Saxton.

Frank Houghton, banker, died suddenly in his 63rd year of a heart attack on May 6, 1935, at his home, 112 Pinckney Street, Boston. Entering the Institute with the Class in 1889, he left at the close of the sophomore year to become Secretary to the cashier of the National Exchange Bank, Boston. A few years later he was appointed cashier, remaining in that capacity until 1907 when the bank was merged with the National Shawmut Bank. After the consolidation he was appointed assistant cashier. He held that position and those of trust officer, Secretary, and Treasurer of the Shawmut Corporation until his retirement in 1924. Previously he had been a trustee of the Eliot Savings Bank, Dudley Street, Roxbury, and in 1927 he was made President of that institution, remaining in that office until his death. He was active in civic affairs and welfare work, his principal interests being the Roxbury Charitable Society and the Home for Aged Women. He never married and is survived by two brothers and a sister. — **FREDERIC H. FAY**, *Secretary*, 44 School Street, Boston, Mass. **GEORGE B. GLIDDEN**, *Assistant Secretary*, 551 Tremont Street, Boston, Mass.

1895

These notes go to press just one week before our Class holds its Fortieth Re-

union, scheduled for Saturday and Sunday, June 1 and 2, at the Oyster Harbors Club, on the Cape, at Osterville, Mass. Everything is set for a good old-fashioned get-together and we hope to report a glowing account of the event in the October Review.

Our ranks thin out as years go by, but the reports at hand indicate an attendance of at least 80% of the number we had at Plymouth in 1930. It is regretted that we must report the very serious and unfortunate mishap to Walter J. Rickey, of Helensburgh, Scotland, who was *en route* to the States to attend our reunion, and while in France met with a serious automobile accident. Current reports indicate that he will pull through, but we will miss him at the reunion.

We regret to report the passing of F. Highlands Burns, chairman of the board of directors of the Maryland Casualty Company, on March 30, 1935, at his home, 806 University Parkway, Baltimore, Md. He had a remarkable career in the development of the Maryland Casualty Company. He was identified with the company since its establishment in March, 1898, and was the last survivor of the little group of seven men who started this business. In the beginning, Burns was the sole clerk, the only employee of the company without a title; the other men were the officers. He passed through successfully all the offices of the organization, was elected in 1920 to the presidency, and in 1934 to the chairmanship of the board of directors. Burns' greatest achievement was the inauguration of the company's first claim policy and procedure. Other affiliations included the Baltimore Safety Council, Vice-President of the Western National Bank, director of the Eutaw Savings Bank, board of trustees of the Harriet Lane Home, a fellow of the Casualty Actuarial Society of America, President of the Baltimore Country Club, member of the Maryland and Elkridge clubs of Baltimore, and the St. Anthony's Club of New York City. Highlands Burns characterized the true spirit of modesty, unselfishness, and fair dealing throughout all his contacts in life.

François E. Matthes recently delivered a most interesting address before the American Geophysical Union on the subject of the Ice Age. He presented evidence that glaciers of the United States are melting away faster than ever. Nearly half of the world is gripped by cold. There is enough ice in Antarctica to encase the earth in a layer 120 feet thick. If that sheet of southern ice, covering 5,000,000 square miles, were suddenly to melt, the oceans would rise at least 120 feet. New York, London, the great seaports could be saved from inundation only by the erection of towering dykes. Louisiana sugar plantations would become coral reefs and the Desert of Sahara, a great inland salt sea. Eels would swim in Westminster Abbey. Luckily for us, the melting of Antarctic and other ice proceeds at the leisurely pace that we associate with geological time. For good reasons of her own, nature has seen to it

that the pace is not uniformly maintained. — **LUTHER K. YODER**, *Secretary*, 69 Pleasant Street, Ayer, Mass. **JOHN H. GARDNER**, *Assistant Secretary*, Graybar Electric Company, 420 Lexington Avenue, New York, N. Y.

1896

Rockwell's annual spring trip to the South lasted ten days, beginning March 21. He stopped three days at Bethlehem, Pa., for the National Collegiate Championship wrestling and the meeting of the Olympic Committee, of which he is a member. He visited his people in Harri-man, Tenn., and then had three days at Pinehurst, where Joe Driscoll was tuning up his golf. He had a daily game with Joe, and together they followed the play of the North-South Professional Golf Championship. At the time these notes are being written, John is getting out his fishing tackle for a spring fishing trip in Maine, starting on May 29.

The Secretary had a glimpse of Will Coolidge in the corridor of Technology on April 16, when he was here for a meeting of the Corporation Visiting Committee for the Physics Department.

Two recent communications have been received from Charlie Lawrence. He gave up his home in Brooklyn and joined his son, Charles K. Lawrence '24, who is with the Solvay Company at Syracuse, and has, as an avocation, a farm of 165 acres in the adjacent town of Baldwinsville. Charlie says that the winter on the farm has been very enjoyable, as the buildings are equipped with all the comforts of the city. It is located only a mile from the center of town, and 15 miles from Syracuse. He has apparently been having an intimate contact with farm life, which is entirely a new experience for him. He attended a meeting of the Syracuse Technology Club where Warren K. Lewis '05 was the speaker. Along in April, Charlie was called down to New York for some temporary work, and was fortunate to be there at the time of the meeting of the New York Club, which was attended also by Steve Crane. John Tilley had expected to be present, but found it impossible at the last minute, and Woodwell, who usually goes to these meetings, was in Lansing, Mich., engaged in some municipal plant work. Charlie also saw Sam Hunt at the dinner. You know we think of Sam Hunt as being such a broad individual that he is almost as much a '96 man as a '95 man. Charlie had been following Technology events as reported in the *New York Times*, dealing especially with the Hultman oyster hearings.

Classmates will be interested to know that the Hultman hearing came to a rather sudden end, and Governor Curley did not put the question to a vote by his Council, but turned all the evidence over to the District Attorney for possible criminal prosecution. Gene is therefore still on the job, and nothing further has been heard in the matter up to the present.

The Secretary received a card from the Reverend Welles Mortimer Partridge, dated May 14, Jacksonville, Fla., stating

1896 Continued

that he was starting north and had preached all over Florida during the past winter with the exception of the northwestern part. Apparently he did not locate Con Young in Florida, as no mention was made of him.

Lloyd Wayne has sent in some interesting notes. He reports that he has not been east of Philadelphia since four years ago. He had seen Guy Wall about four months previously, when Guy was just about to start on a visit to China. When Guy got that far he decided to continue on around the world, and finally got back home the 1st of April. Wayne reported that Joe Stickney had been sojourning in Florida for a respite. Apparently Joe did not run across either Partridge or Young there. At the time Wayne wrote, the western dust storms were having their effect on the atmosphere of Indianapolis sufficiently to make it possible to look directly at the sun without discomfort. After a rain and subsequent drying, residual gray and yellow coatings were left on things, but more frequently gray than yellow.

Wayne had seen Billy Andrew a few days previously. He lives at Terrace Park, a few miles out of Cincinnati, right on the banks of the Little Miami River. He is actively engaged in the management of the Cincinnati Electric Railway Equipment Company, which has always been in the family. They have branched out a little and now also make the fancy street-lighting standards of many designs. Wayne says Billy is just like he used to be, except that the blond hair is less and gray, but he laughs and smiles and has the coloring just as of old.

Guy Morrill has sent on greetings from Philadelphia along with regrets that he cannot be present at the alumni reunion this year, but expressing the hope that he will be on hand at our class reunion next year. — Dan Bates is another man who has been heard from in Philadelphia, although he gave little news, beyond indicating that he was well and busy.

A note from Paul Litchfield in Hawaii, dated April 30, told of the wonderful time he was having in the Hawaiian Islands, his talk before the combined meeting of the Engineers Club and the Technology organization, and of the unexpected meeting with Jacobs. At the time he wrote, he had spent an interesting day with Dr. Jaggar at the crater of Kilauea. Paul was having a most interesting three-and-a-half months' trip visiting the various Goodyear operations around the world. He left Akron early in April, and had spent a week on the 36,000 acres of cotton ranches in Arizona which belong to his company, and a week at the Goodyear tire factory in Los Angeles. It was his first visit to Hawaii, and he was most enthusiastic. He was sailing the next day for the Fiji Islands, New Zealand, and Australia, where he would spend a week at the Goodyear tire plant in Sydney, and then go on to open the new factory at Buitenzorg, Java. This will be followed by a week on the Goodyear rubber plantations in Sumatra, and then on to Singapore and India, and up through

the Red Sea and Mediterranean to Europe. There he will visit the Zeppelin works at Friedrichshafen and the Goodyear tire factory at Wolverhampton, and return home about August 1. He is counting on being present at our class reunion next year.

Various communications have been received from Jacobs on the trip which he and his wife are having around the world. At last accounts he had arrived in Honolulu. Incidentally, he has done a fine job for the Alumni Association by speaking at alumni meetings in Tokyo, and also in Honolulu, but unfortunately missed out on contacting the other alumni groups *en route*.

The usual breezy spring letter from Con Young has arrived reporting that he and Mrs. Young were leaving Florida on April 29 for their northward trek to Cape Cod. Con's health has apparently been very much improved this year, and this winter he was able to participate in the various social and musical events in Fort Myers. He made the rather surprising report that Joe Clary had become a benedict. It seems that Joe's daughter had been engaged for some time to a very pleasant young man from Alabama who had been working several years in Washington. This young man's mother came up to Washington to look after him, and soon found herself looking after Joe, with the result that Joe changed his status from that of widower to that of husband. This occurred sometime in January. Con raised the question as to what would be the family relationships when the daughter got married, involving the dual rôle of father-in-law and stepfather for Joe, and mother-in-law and stepmother for Mrs. Clary. Con was hoping that Joe might be persuaded to come to our class reunion next year. Con said that he had heard from Lou Morse, who reported that he had had a very good winter, and Mrs. Morse also was much improved in health. Con attributed some of his improved health to the yeast treatment that he had been taking, and he recommends it to other classmates who may not be in entirely first-class condition.

Belated information has now become available regarding our classmate, Alonzo B. Conant, who passed away on January 27, 1932. He was with us during the freshman year, and was a brother of our other classmate, Alfred D. Conant, of Plainfield, N. J. In 1905 he went to the Black Hills of South Dakota and became interested in the Hidden Treasure Mines, being Treasurer of the organization. This venture was not entirely successful, and in 1908 he moved to Spokane, Wash., where he lived until 1921, being in the employ of the city. When his father died in 1921 he was called back to Plainfield, N. J., and in 1922 he went west to Long Beach, Calif., where he was in the furniture business, and also owned grocery stores. Later he sold out and went into the apartment-house business. He was proprietor of the Conant Arms Apartments at the time of his death. He was taken sick in November, 1931, his illness

being brought on by worry over business affairs, which resulted in heart trouble. He was married in 1907 to Miss Minnie Preston in Lead, S. D., who survives him.

Our classmate John C. Scovel, Jr., died on December 20, 1934, in Chicago, after a week's illness of pneumonia. Scovel was the son of the late Judge Scovel of the Chicago Municipal Court. He was born in Bloomington, Ill., on May 30, 1873. He married Ida Brine in 1901 and the pair had one child, Margaret, born June 9, 1905. Always mechanically minded, he worked in a blacksmith shop as a young man, and took a course in the Chicago Manual Training School before coming to Technology. After graduation he joined the staff of Fred W. Wolf Company, a prominent concern in the refrigerating field. From this position he went to the York Ice Machinery Company in Pennsylvania, and in 1902 he joined the Creamery Package Manufacturing Company of Chicago. He had drafted ice machines, including three of 450-tons refrigeration, for Armour and Company. He had erected temporary electric light plants and malt houses, had drafted and laid out work for ice plants, and had erected and operated a 10-ton ice plant for one season. His title was refrigerating engineer of the Creamery Package Manufacturing Company and his work included the design of machinery and pipe shops complete for a new factory, and crane and special tools therefor. He had designed altogether about 250 refrigerating and ice plants, varying in capacity from 1¼ to 125 tons. He is survived by a daughter, two grandchildren, two sisters, and a brother.

Herman A. Poppenhusen died on May 8, at the home of a daughter, Mrs. Carl Bauer, 5952 Park Place, Hammond, Ill. We all remember him as a particularly active student, being a member of the Electrical Engineering Society, Class Treasurer, on the Tech Election Committee, and a member of the Photographic Society. He was born January 13, 1875, a native of Flushing, N. Y., although he came to Technology from South Evanston, Ill. He was married in 1898 to Clara O. Dittrich in Philadelphia. Two children were born, Caroline in 1900 and Eleanor in 1903. The other daughter is now Mrs. Humphrey Grylls. In addition to the two daughters he is survived by his mother, Mrs. Caroline Poppenhusen, of Evanston, Ill., four grandchildren, and a brother. His first work after leaving Technology was along electrical lines in Walpole, Mass., coupled with some engineering in street railways and factories. He went with the Green Engineering Company as one of its founders in 1898, and was for many years Vice-President and General Manager, until it sold out in 1923 to the International Combustion Engineering Company, when he retired. All through his life he retained his portly frame and his genial character, with ready smile and pleasing personality. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M.I.T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

1897

Early in the year, James G. Moran was elected to the office of President of the Massachusetts Senate. Born in Mansfield, Mass., he attended Groton Academy before entering Technology, later taking a degree in law at the Northeastern Law School. He served three years in the Massachusetts House of Representatives and is now in his 13th year in the Senate. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass. CHARLES W. BRADLEE, *Acting Secretary*, 261 Franklin Street, Boston, Mass.

1900

On May 3 there was scheduled another of those periodical dinners of the Class and a pleasant get-together resulted. Here are the names of the 20 faithful: Richardson, Gibbs, Allen, Ziegler, Ingalls, Westcoat, Hall, Russell, Jackson, Patch, Graff, Bugbee, McCrudden, Fitch, Wedlock, Neall, Brock, Brigham, Walworth, and the Secretary.

Albert S. Merrill died suddenly, Sunday morning, March 31, at his home, 90 Park Hill Avenue, Auburn, Maine. He was in his usual health when he arose but shortly afterward was stricken with a hemorrhage. Mr. Merrill was born in Auburn, July 3, 1878, the son of Frank P. and Elizabeth (Ring) Merrill. He attended high school in Malden, Mass., and was graduated from M.I.T. in 1900. He taught mechanical engineering at the University of Wisconsin and at Lafayette College. During the World War, he was a representative of the United States Government at a Canadian munitions plant in Toronto. At the time he retired eight years ago, he was connected with the New Jersey branch of the Westinghouse Company. He married Mrs. Amy Attwood Wilder of Auburn, June 23, 1930, the ceremony being performed at the summer home of the officiating clergyman, the late Reverend L. Weston Attwood, at Bailey Island. Besides his wife, he leaves a stepdaughter and a stepson, Venetia and William A. Wilder of Auburn. He leaves also an uncle and aunt, Charles Ring of Lewiston and Mrs. Warren Buck of Auburn. Since his retirement from active business, Mr. Merrill had been greatly interested in antiques, and in compiling genealogical records. He had data nearly complete for a genealogy of the Ring family. Mr. Merrill was a member of the Universalist Church, Mu Chapter of Phi Gamma Delta Fraternity, and the A.S.M.E.

Locke writes from the Alumni Association that George Tweedy, III, of Deer Lodge, Mont., is now associated with an organization which is rehabilitating the old Emery mine at Deer Lodge and considering the installation of a mill. — Locke also writes that Dan Johnson, III, who has been around Tonopah, Nev., for years and years, has written him a rather newswy letter. Last summer he was busy making plans for rebuilding the Millers' mill of the Tonopah Mining Company to treat old tailings at the rate of 600 tons per day by the counter-current decanta-

tion method of cyanidation. This mill is now working and treating something more than 600 tons. This job was of peculiar interest to him because he had the same construction job in building the mill in the first place away back in 1905 and 1906. A short time ago he made a trip to Lida, Nev., to study an old mill there and see what would be available after discarding a lot of the old junk that was of no value. The result was that he built a small mill from what was left, along with some new material. Just at present, he is doing some work for the Natomas Dredging Company. This company is sampling the Manhattan Gulch, with the idea of dredging it. His part of Nevada has been rather quiet in recent years. The old camps of Goldfield and Tonopah had become almost in the class of the old ghost mining towns of the West, but the increased price of gold and silver during the past year has had the effect of causing new activity in these old camps.

We were all shocked to hear of the death on January 29 of Rawson Collier, VI, a detailed account of his life has already appeared in an earlier issue. — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

1901

William S. Pepperell is Executive Director of the Code Authority for the Textile Manufacturing Industry. He was elected by the industry and, while the code is a national one, his office is not a government job. — A. J. Eveland has recently made a trip to the southwest of the United States and Mexico for an extended mine examination on behalf of R. Potter Campbell, Inc., of New York City.

The following is taken from the Boston *Transcript* regarding the death of one of our classmates: "Leonard M. Fowle, yachting editor of the Boston *Globe*, died, March 16, at the Hollywood Hospital, Los Angeles, following an illness of 10 days. He was the son of the late Arthur A. Fowle, for many years managing editor of the *Globe*.

"Mr. Fowle was born in Woburn, July 29, 1878. He attended Holderness School at Holderness, N. H., and then went to the M.I.T., where he studied mechanical engineering. From there, he went to the Lawrence Scientific School at Harvard for three years, where he was a member of the Class of 1905.

"While he was a student, he covered yachting events for the *Globe* in the summer. Later, he became a permanent member of the *Globe* staff and worked with his father, Mr. Fowle, recognized as a yachting expert in New England.

"He is survived by his wife, Grace A. C. Fowle; a son, Leonard Fowle, Jr.; and a brother, Donald A. Fowle, of Woburn."

Roger W. Wight, Superintendent of Agencies for the Travelers Fire Insurance Company, writes the Secretary: "My impression is that a Thirty-Fifth Reunion next year would prove much more appropriate than a reunion this year, and, if we start early to stir up enthusiasm for such a reunion, I believe that we

should have a good attendance and that most of our classmates who are able to attend will be glad to make our meeting place at Oyster Harbors on Cape Cod, Mass." The views of other members of the Class in regard to our Thirty-Fifth Reunion will be appreciated.

Lammot du Pont, President of E. I. du Pont de Nemours and Company, leading smokeless-powder manufacturer in the World War, states: "The du Pont Company does not want war and has vastly more to gain from peace. Not only the strong natural sympathies of its management, but also the plain business interests of the company lie overwhelmingly in the direction of world peace.

"In contrast to its original position as distinctly a gunpowder producer, the du Pont Company today is essentially and chiefly a manufacturer of products having no relation to war. Duco, Cellophane, Pyralin, Fabrikoid, rubberized fabrics, pigments, heavy chemicals, rayon, dyestuffs, and many other lines are cited among the examples.

"In the company's annual report for 1933, its stockholders were informed that 'its smokeless powder department, in which are included sporting powder as well as the military propellants which constitute the great bulk of all military explosives, ranks now tenth and last among the ten manufacturing departments and subsidiaries which make up the company's business, both in amount of capital invested and in volume of sales.

"Total profits earned by the du Pont Company on military explosives of all sorts over the past ten years have amounted to only about two per cent of the company's total manufacturing profits." — ROBERT L. WILLIAMS, *Secretary*, 109 Waban Hill Road North, Chestnut Hill, Mass.

1903

F. B. Crosby, VI, has recently been elected President of the Worcester Engineering Society, which is made up of the various engineering societies of the city. He has been with the Morgan Construction Company for the past 17 years as electrical engineer.

Simpson, IV, writes, from San Francisco, that he has been practicing architecture, with nothing very unusual about it, and is also President of a manufacturing company which gives him a chance to get a lot of exercise in a Pullman car, so that he weighs more than he did when he played on the hockey team. — W. H. Adams, II, is about to get his degree of M.S. in Public Administration at the University of Southern California, and thinks that California is the best place in the U. S. for everything — except to make a good living.

Tuell, I, has been elected President of the Engineers' Public Service Company, Inc., of New York City. — Bennett, III, is reopening the Aguilar mine of the St. Joseph Lead Company in the province of Jujuy, Argentina, and expects to have a 200-ton mill in operation by the first of next year with about three-quarters of a

1903 Continued

million dollars to be spent. — Farnham, XIII, has been back in Boston with the advertising firm of Chambers and Wiswell for something over a year.

Regan, II, was prominently mentioned in the Boston papers as a possible successor to the office of Assistant Superintendent of Schools in Boston. He is headmaster of Dorchester High School for Boys and has been teaching in the Boston schools since 1905, except for a brief interval of study in Italy. — Morse, I, has been elected to the Board of Directors of the American Society of Civil Engineers, representing the district including Ohio, Indiana, and Kentucky. He is just finishing his first ten years of service as manager of the Indianapolis Water Company, and his associates and friends presented him with a "Book of Appreciation" on May 31 of this year.

Scofield, XIII, now in Stamford, Conn., writes that during the past 30 years he has been in many different branches of mechanical engineering and shipbuilding, from small yachts to battleships, mostly in designing and estimating, but with some inspection of materials and a few trial trips. — Goodwin, III, has been fuel agent for the Southern Railway System for the past 25 years, purchasing and inspecting 10,000 tons of coal a day.

George Greene, V, is the latest whom we have heard of to become a grandfather. The Secretaries are gathering material in regard to the second generation of '03 and, so far, have heard of 49 children and four grandchildren from 23 members of the Class. Names and further details will appear in a subsequent issue. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 89 Broad Street, Boston, Mass.

1905

With the second *Flivver* just off the press, another editorial job appears, so let's go. — From Tom Estabrook, V: "I did go to Berlin, N. H., in the fall of '32 and stayed there for about three months. Then I was transferred back to Portland and have been here, most of the time, ever since.

"If you don't know this town, take it from me that it is a good one! Large enough and not too large, lots of fine people, not too expensive, with lakes, rivers, hills, and the good old briny right at its doors. The last, I'll admit, is one of its main attractions for me; I have a 'staunch and able' 34-foot motor cruiser that lies at a mooring at Falmouth Foreside during the summer, six miles from the house and right in the summer resort section. It is only a matter of a few hours to Boothbay, at the western end of the finest cruising country there is.

"I still take a lot of interest in dramatics and get occasional chances to look over the footlights under the auspices of our very active and flourishing Dramatic Guild. We have our own theater, a 'pro' director, and about 700 members, and have lots of fun.

"I see Jim Barlow, I, frequently, as he lives quite near me and belongs to a couple of clubs that I belong to. Jim has had a tough time up to last year, due to the pressure of the last of the old politicians, but has done a fine job and gets the credit for it, in most quarters. Leander Higgins, IV, I also see occasionally." — By this time those of you who partook of the grand dinner in Symphony Hall will know whether Tom's famous "On Rogers' Steps" was played again by the Pops orchestra.

Bert Files, I, writes from Boston: "I am still connected with the new building at 75 Federal Street, now five years old and 85% rented. You may be interested to know that I (at my age!) have taken up sailing for a recreation and have just bought a class 'O' boat to race this summer. My young son will do most of the sailing. I am living in Hingham the year round, close to the water."

Fred Goldthwait, II, Boston, says: "I am now launched into the golf-course irrigating game. It really is a humanitarian mission, trying to make better turf so that some of the poor duffers will have better lies, hence better scores. It isn't a get-rich-quick scheme."

Roy Lovejoy, IX, has been in New Orleans again spending part of his time, as usual, inspecting gardens. He tried to see Bob Cutting, II, who was out of town but left a message with "Mrs." or "Miss," he was not sure which.

Bill Keen, V, Albany, writes: "I have been *hors de combat* for two years now and still have to obey the doctor, who specifies rest, quiet, no excitement, no traffic, and so on. My right side went flue very suddenly and I lost the sight of one eye. However, my side is now O.K. except that it is a little awkward writing legibly. Haven't been able to return to the office yet." Accept our sympathy, Bill, with sincere hopes for an early recovery.

In April a student friend brought a Smith girl to call, the attractive daughter of Captain Lewis B. McBride '04, XIII-A, C.C., U. S. Navy, now stationed at Annapolis. — Bob Folsom, X, is Executive Vice-President, New England Fuel and Transportation Company with his office in Boston. — Casey Turner, VI, thinks that Jim Barnes, VI, "must have moved from Detroit as I have not seen him for some time." — Henry Ayers, VII, directs Sun Dine plants, packing citrous juice, in California, Texas, and Florida. He last reported from Florence Villa, Fla. — Webster H. Taylor is with the Columbia Broadcasting Company, Detroit. Capacity?

From Harry Charlesworth, VI, New York: "I have always taken a great interest in engineering-society work and at present, in addition to being on the Board of American Institute of Electrical Engineers, am also on the Board of United Engineering Trustees, Inc., and recently was elected Chairman of The Engineering Foundation. This is a type of association which I have greatly enjoyed, as it brings me into such close contact with fellow engineers and interesting engineering activities.

THE TECHNOLOGY REVIEW

"As to the family, I have not, in answer to your specific question, as yet married off a daughter. (Like Frank Chesterman, R.D.) Rosemary was graduated last year from Vassar and is at present attending an architectural school in Cambridge. I have a son, Roger, who is in his second year at Princeton and we have two boys at home with us who are still in public school. . . .

"I do not recall whether I have advised you of the fact that during 1933 I was asked to return to the American Tel. and Tel. Company in the capacity of Assistant Chief Engineer."

Though contrary to Review style rules, we hope the editors will permit the following jingle which came to light too late for *The '05 Flivver*. Of its origin or significance, we are ignorant but it has historical authority and we like it. Do you?

Our Louie, on his Banjo, hee
Did play for us right merrilee,
While on his face, we still do see
THE SMILE THAT WON'T COME OFF.
Louis Killion, II, of course.

Fred Goldthwait, II, has the only clean record of attendance at '05 reunions. He has contributed to seven. Buff, III, Prince Crowell, X, Dickerman, XIII, Hawkes, II, and Marcy, II, have been at six. This Thirtieth Reunion is naturally not included. — R. W. Senger, III, general superintendent of the Garfield smelter, left the United States by airplane, the middle of March, for Chile, where he expected to be engaged on business for the American Smelting and Refining Company, for three or four weeks. He was to return to Garfield by airplane via Miami, Fla., and New York City.

Lane Schofield's, III, sister, wife of a Technology Phi Gamma Delt, had a lot to say about Peachem Paine '04-'05 and Ben Lindsly, III. Ben is now chairman of the new Pools Committee of the Petroleum Administrative Board. Hub Kenway, II, recently had the pleasure of dining with him in Washington. — Forrest Sprague, V, for the last two years in Callicoon, N. Y., is back in Luray, Va., at the tannery.

Wishing to get some good advice on natural-color lantern slides, we appealed to Irving Cowdrey, II, who has done a great deal with hand-colored slides and who, we were sure, had looked into autochrome. His reply was, "Don't"; and he went on at length to explain the difficulties. When an expert like Irving expressed doubt, it was settled as far as we were concerned.

Mrs. William G. Housekeeper, II, of South Orange, N. J., won a prize at the Federated Garden Clubs show in New York with a display of skunk cabbage. — John Damon, VI, Madison, Wis., hopes to drive east in July. — Alden Merrill, V, Buffalo, has a daughter at Smith. She came down to the Wesleyan spring parties but father didn't tell her to look up an old friend, or she didn't want to. — Our first chain letter came from San Antonio, thanks to Willard Simpson, I. Sid Cole, II, is still at the

1905 Continued

fresh-air camp in Rutland, Mass., and would probably appreciate visits from classmates as he is not often away.

Willard Simpson, I, consulting engineer, San Antonio, writes: "I have the structural plans for two post offices in Washington for approval, at this time, and I am expecting to be called up there to make certain corrections on these plans for final approval. It is just too far from here to Boston to make any special trips in these days of limited resources and uncertain prospects.

"While a big majority of those in my line are now in some form of government employ and have either given up their offices or are trying to operate an office and hold down a government job at the same time, I have doggedly maintained my office through this siege with a feeling that it was up to some of us to stay off the government soup-wagon and do our own paddling as best we could. I have succeeded so far, in a way, and really can see a hopeful outlook through an interest gradually developing and strengthening itself in construction by private capital. My work has continued, with the exception of two or three post-office plans, to be that of a private nature — private construction financed by private funds — and I think more of a 100,000-dollar job of this nature than I do of any million-dollar PWA job that the Government can set up.

"My oldest son, Willard, is a freshman at Agricultural and Mechanical College of Texas and doing very well. It was just too far to send him to M.I.T. at this time, but if things go well, I hope to give him the opportunity of attending M.I.T. after he is graduated from Agricultural and Mechanical."

Walter Clarke, XIII, sent a clipping from a Pittsburgh paper: "Francis J. Chesterman, Vice-President and general manager of the telephone company, does a lot of phoning himself. There are three lines to his office, and he estimates that he makes and receives between 80 and 100 calls a day. His personal phone is a French dial set, bronze. He always uses his forefinger when he dials a number — never a pencil. . . . The greatest distance he has phoned so far was from Pittsburgh to London (twice) and from London to this city (once). . . .

"In his home Mr. Chesterman has nine telephones, a complete house-phone system. It's possible to call any room in the house from any other room. There's even a phone in the laundry. (How about the furnace? R.D.) Two different lines serve the Chesterman residence, one for outgoing and the other for incoming calls." Wow!

Arthur Hooven, III, writes from his ranch in Arcata, Calif.: "I notice in *The Flivver* that Bill Gouinlock used to play football. I had forgotten about that. I'll bet he can't do much in that line now. Though he still may play a good game of 'Pitch'.

"For five years I followed railway location and construction on the Pacific Coast and in Mexico. For the last 25 years I have been engaged in farming; 10

years in Southern California and 15 years up here. For five years the State Department of Agriculture conducted a number of their experiments and investigations on my ranch here. That work was of much interest to me.

"In 1920 I made a trip through Cuba and part of Central America with a view to locating there. However, I decided against the bugs and the fevers, and still consider California pretty good, even if we do have Upton Sinclair."

From the Chicago *Tribune* of March 14: "Colonel F. Charles Starr [I] yesterday was appointed manager of a project for which \$12,500,000 has been allocated. He will have an office at 120 South La-Salle Street. Colonel Starr was general manager of the architectural firm of Schmidt, Garden and Erikson for eight years and for three years was senior deputy building assessor in Cook county. He practiced architectural engineering for ten years at Washington, D. C."

To the above, Charlie adds: "Immediately surrounding the Loop is a wide belt of extremely depreciated property where living conditions are frightful, insanitary, unsafe, where city fire- and police-protection costs are high and tax returns are near the vanishing point. In one of these spots the government is going to build a low-rental housing project, as an example. This particular project covers 70 acres, includes over 700 parcels, with a present population of over 2,500 families. It is proposed to replace the present conglomeration of fire traps with simple, modern, attractive, fireproof dwelling units, with interesting landscaping, gardens, and parks. Some \$8,500,000 has been allocated for construction. The site has been surveyed, titles of parcels are being examined, and a group of selected architects [including a number of Tech men] are busy on the plans. All told, it is an intensely interesting project." As Chairman of the Massachusetts State Board of Housing, Sid Strickland, IV, seems to be conducting a similar venture with a section of 24 acres somewhere in Boston. We have been unable to get the story.

In the death of Charlie Clapp, III, on May 9, the Class has lost one of its most eminent members and a true friend. Dr. Charles H. Clapp, President of the University of Montana, since 1921, served at one time as assistant geologist of the United States Geological Survey. He was a native of Boston, Mass., and was graduated from the M.I.T. He had taught at the University of North Dakota, the M.I.T., and the University of Arizona. He also was associated with the Geological Survey of Canada.

In 1916, he went to the School of Mines at the University of Montana as professor of geology, becoming President of the University five years later. From 1919 to 1922 he was director and geologist of the Montana Bureau of Mines and Metallurgy, and from 1914 to 1925 was associated with the United States Geological Survey.

An editorial in a Butte paper reads in part: "A man of highest ideals in the rearing of the new generation, Dr. Clapp made

an enviable name for himself as head of the institutions at Butte and Missoula. He sought ever to raise college and university standards. He endeavored, above all, to administer to the youth of the state such educational information and training as would enable them to become self-reliant, proud, and useful citizens of the commonwealth. Increased effort to that end was one of his constant demands upon the faculties over which he presided. And to that high purpose the people of the state as well as the youth responded so thoroughly that Dr. Clapp was revered by the elders as he was beloved by his students. Alumni of the University, particularly, will feel the loss of his passing. To them he was always a friend, a refuge, and an inspiration." — ROSWELL DAVIS, *Secretary*, Wesleyan University, Middletown, Conn. SIDNEY T. STRICKLAND, *Assistant Secretary*, 209 Washington Street, Boston, Mass.

1907

Late in March, we had occasion to write Jim Barker, Vice-President and Treasurer of Sears, Roebuck and Company at Chicago, and when he replied he spoke of meeting Harry Moody, by chance, at the Chicago airport. A short time afterwards, we were writing to Harry and mentioned the incident, and in replying, Harry wrote, under date of April 25, as follows: "I was glad to have received your letter of April 17. It is true that I did run into Jim Barker at the Chicago airport. I was just returning from a trip in which I had flown out to the Pacific Coast and back and was just making the last change of planes on my way home to Cleveland.

"I do not think I have seen Jim since graduation. I had had a rather difficult flight back from the Coast as we ran into some of those sand storms and my plane was late in arriving at Chicago. I had been flying all night and all morning, and was rather tired. I heard a voice say, 'Isn't this Harry Moody of the Class of 1907?' I turned around and saw Jim and, with a view of his smiling face, I forgot all about being tired. We did not have much time to talk as he was taking his plane for Dallas and I was taking mine to Cleveland, but it seemed good to see him.

"While in Los Angeles, Clarence Lamont came down to the hotel and had breakfast with me one morning and we had a chance to talk over old times, as I had not seen Clarence since he left New York, quite a few years ago. He told me of some of our classmates whom he had met on the Coast, and we spent an interesting morning together."

Full account was given in the May Review of the appointment of Ed Moreland to be Head of the Electrical Engineering Department at the Institute. We should fail in our duty and privilege, however, if we did not mention in these notes this high honor which has come to our classmate. As soon as the news of the appointment appeared in the Boston papers of April 9, we wrote personal and class congratulations to Ed and received a gracious reply.

1907 Continued

A series of papers by W. W. Pagon appeared in *Engineering News-Record* of March 15, July 12, October 11, and December 27, of 1934, and April 25 and May 9 of this year. Others are to follow. — The son of Dick Woodbridge, Richard G. Woodbridge, 3rd, was graduated from Phillips Academy in Andover, Mass., in June, and plans to enter Princeton University in the fall.

Remember Lloyd Fredendall who was adjutant in the Corps of Cadets our freshman year? He is now lieutenant colonel in the army, located at 703 Federal Office Building, Omaha, Neb. — George Bryant, of Tech Show fame during our undergraduate days, can be reached in care of R. L. Polk and Company, 431 Howard Street, Detroit, Mich. — From the Alumni Office we have an address for A. T. Kolatshevsky, whom you will recall as the bearded student of 1903-1907, from Russia. He is at 113 Lanteernhof Straat, Deurne-Zuid, Antwerp, Belgium. — Major Laurence T. Walker, U. S. A., can be reached in care of Messrs. J. P. Morgan et Cie, 14 Place Vendome, Paris, France.

About six months ago, we stated in our notes that Frank MacGregor had gone to Buenos Aires on business for the du Pont Company. We can now announce his plans more definitely, having received the following letter from him on April 30: "Have been gone six months, four of which were spent in the Argentine. Was working on a project to establish the first rayon industry there, and, just before leaving, we put the enclosed notice in the Argentine papers, this being a translation of the Spanish: '... Ducilo A. S. Productora de Rayon has decided to commence the manufacture of Rayon (artificial silk) in the Argentine Republic. For this purpose, land has now been purchased in Quilmes, Province of Buenos Aires, and the erection of the factory will be put in hand immediately. It is calculated that the installation will take about 12 months to complete. Once the plant is in operation, it is estimated that between 800 to 1,000 work people will be employed. The capital of the company will be in the neighborhood of 25 million pesos, and will be furnished in the greater part by British, North American, and French interests. — This factory is the first of its kind to be installed in the country, and it is unnecessary to emphasize the importance of this step in the development of national industry.' — The North American interest is the du Pont Company. Yours truly is the President of the new company."

"Enjoyed my stay as well as my trip. On the way down I took a look at Rio de Janeiro, Sao Paulo, and Santos in Brazil, Montevideo in Uruguay, and, on return, flew across the continent and over the Andes to Santiago. Sailed from Valparaiso, Chili, and had a look at Ecuador, Bolivia, Peru, and Colombia on the way up. Oh, yes, my first trip through the Panama Canal! Reached New York, April 27. — Expect to be here a couple of months yet and then return to Buenos Aires. Construction of the plant will

follow." Frank's address is: "Ducilo, A. S." Avenida, Roque Saenz Pena 832, Buenos Aires, Argentina, S. A.

After reading the most enlightening article by F. Alexander Magoun '18 in the May Review regarding Technology former students whose names appear in "Who's Who in America," "Who's Who in Engineering," and "American Men of Science," it occurred to us that it would be of much interest to know the members of '07 who are included in these select biographies. So we wrote to Professor Magoun and, through his fine courtesy, secured the names of '07 men thus honored.

A bit of investigation and supplemental reading by the Secretary, inasmuch as some of the names are not on our class mailing list and the men are unknown to us, enables us to give the following facts.

Included in all three of the reference books named are John Barry, John Davis, Hud Hastings, Ralph Hudson, and Frank Stockwell. — Barry is President of the Texas College of Mines and Metallurgy at El Paso, Texas, and also is a consulting geologist. — Davis has been with the United States Bureau of Mines at Washington since 1916 and chief engineer of the Information Division there since 1928. — Hastings, whose name has frequently appeared in these notes during the past 28 years, is Professor of industrial administration and chairman of the section of applied economics at Sheffield, Yale University. — Hudson, also often mentioned in *The Review* as Professor of electrical engineering at the Institute, is widely known in his particular field. — Stockwell is Professor and Head of the Department of Electrical Engineering at Stevens Institute of Technology, Hoboken, N. J.

Included in "Who's Who in America" and in "Who's Who in Engineering" are Frederic G. Coburn, E. W. James, and Allan Cullimore. — Coburn, Master of Science at Technology in '08, is considered a member of our Class. A graduate of the U. S. Naval Academy in 1904, he became a naval constructor, and remained in the navy for many years, eventually resigning from the service to become a member of the firm, Sanderson and Porter, 122 East 42nd Street, New York City. This engineering concern specializes in the examination of industrials for banks and bankers. Coburn has also taken a great interest in aviation, being President and general manager of The Aviation Corporation, and director of several other corporations in this field. — Ed James, A.B. at Harvard, '01, took graduate work at Technology, 1905 to 1907. From 1910 to 1929, he was connected with the Department of Public Roads, U. S. Department of Agriculture at Washington, becoming chief of the division of design there. Since 1929 he has been consulting engineer and member of Consejo de Vias de Comunicacion of Colombia, S. A. He is recognized internationally as an authority on road building and maintenance. His home address is 6412 Beechwood Drive, Chevy Chase, Md. — Cullimore, widely

known in civil engineering, has been President of the Newark College of Engineering since 1927.

Listed in both "Who's Who in America" and "American Men of Science" is E. L. Chaffee, Professor of physics at Harvard University. He has made notable contributions in the spheres of radio telegraphy, electric oscillations, vacuum tubes, and the study of the electrical response of the retina of the eye.

In "Who's Who in Engineering" and "American Men of Science" is the name of Sidney D. Wells. He has been chemist, engineer, and technical director of various paper concerns, and from 1911 to 1916 and again from 1917 to 1925 was engineer at Forest Products Laboratories of the U. S. Forestry Service. Since 1932 he has been adviser to Combined Locks Paper Company, Combined Locks, Wis. He has created improvements in pulp and paper processes, instruments and equipment, holding patents on many of them.

In "American Men of Science," only, are included Charles Bragdon, Hermann Mahr, and Harold W. Streeter. — Bragdon has been chemical director of Ault and Wiborg Varnish Works, Inc., and by his experimental work has added to the knowledge of protective coverings. — Mahr, superintendent of the dyestuffs department of the du Pont people, has done outstanding work in organic chemistry, in dyestuffs and intermediates, in the testing of greases, asphalt, and building brick, and in the elimination of odor and dust from garbage-reduction plants. — Streeter, not on our class mailing list and unknown to us personally, was at the Institute from 1902 to 1905 and again in 1907, in Course XI. Since 1914 he has been sanitary engineer in the U. S. Public Health Service at Cincinnati.

Found in "Who's Who in America," only, are the names of John Evans, A. G. Labbé, Alexander Macomber, Fred Moses, W. G. Perry, James L. Walsh, and John H. Walsh. — Evans is President of the First National Bank, President of Evans Investment Company and W. S. Cheesman Realty Company, director and chairman of the executive committee of the International Trust Company, director of the Denver Tramway Company, all of Denver, Colo. — Labbé has been with Willamette Iron and Steel Company, Portland, Ore., since 1909, and President since 1921. He has specialized in the development of logging machinery. — Macomber, our well-known Class President and very prominent Alumnus, is a consulting engineer, specializing in gas properties. — Moses is President and Treasurer of Firemen's Mutual Insurance Company, Mercantile Mutual Fire Insurance Company, Union Mutual Fire Insurance Company, all of Providence, R. I. — Perry, member of architectural firm of Perry, Shaw and Hepburn, Boston, has been the designer of many fine public buildings, and during recent years has brought fame and honors to himself in his restoration of the colonial city of Williamsburg, Va. — J. L. Walsh (remember him, Jimmie Walsh, lieutenant in Tech Corps of Cadets?) left the Insti-

1907 Continued

tute in 1905, was graduated from West Point in 1909, advanced through the grades to major, and was lieutenant colonel and colonel during the World War, retired in 1922, and entered the field of banking, now being Vice-President of the National Bank of Detroit, Mich. — John H. Walsh, Annapolis '01, associated with our Class in the course in naval construction, became commander in the Navy, but retired in 1922, and has practised as an expert naval architect, engineer, and financial consultant since then. From 1921 to 1925 he was general manager of the Board of Port Commissioners of New Orleans, was appointed by President Coolidge to be a member of the U. S. Shipping Board in 1925, and later became Vice-President of Standard Fruit and Steamship Corporation at New Orleans. His address is care of Hibernia Baule and Trust Company, New Orleans.

In "Who's Who in Engineering," only, '07 boasts of 18 names: Henry Alvord, James Correll, Herbert Fletcher, John Frank, Rudolph Kudlich, Henry Loring, Ed Moreland, Ralph Morrill, W. W. Pagon, James Reed, Don Robbins, T. W. Roby, Ed Sargent, Phelps Swett, Carl Trauerman, A. H. VanKeuren, Willis Waldo, and Leslie Whittemore. — Alvord is head of the Civil Engineering Department of Northeastern University, Boston. — Correll is Professor of electrical engineering at University of Texas, Austin. — Fletcher is mechanical engineer and salesman with A. B. See Elevator Company, Boston. — John Frank, one of the most loyal and well-known '07 men, is President of Ilg Electric Ventilating Company, Chicago. — Kudlich, II, of whom we have seldom, if ever, had news, has been mechanical engineer with the U. S. Bureau of Mines at Washington since 1913. He is married and has two daughters, Jane and Margaret D.; home address: 406 Turner Street, Chevy Chase, Md. — Loring is Secretary and Treasurer of Ferro Concrete Construction Company at Cincinnati. — Moreland, elsewhere mentioned in these notes, is an electrical and consulting engineer. — Morrill is Associate Professor of experimental engineering at New York University, University Heights, N. Y., a specialist in refrigeration and thermodynamics. — Pagon, also mentioned elsewhere in these notes, is consulting engineer to the United States on airships and to industries on construction and plant equipment. — Reed, of Annapolis '02, was a naval constructor in the Navy until 1920, when he resigned for private work. Connected with the shipbuilding industry, he is now general manager of Schlage Lock Company, Ferry, San Francisco. — Don Robbins, one of our most prominent Alumni in Institute affairs, for many years engineer with Hornblower and Weeks, is now investment counsel in Boston. — Roby is valuation engineer for the Seaboard Air Lines at Portsmouth, Va. — Sargent is chief engineer of Hudson River Regulating District, Albany, N. Y. — Swett is Professor of geology and geography at Middlebury College, Vt. — Trauerman, our oft-mentioned classmate, is a

mining engineer and financier of Butte, Mont. — VanKeuren, Annapolis graduate, naval constructor at the Institute with our Class, is now captain in the navy. — Waldo is engineer and Secretary, Tennessee River Improvement Association, 516 Mills Building, Washington, D. C. — Whittemore is engineer of design for the Sanitary District of Chicago.

So, we find 38 different men of our Class honored by having their names listed in at least one of these books of outstanding Americans. Without reflecting one bit on the propriety of all of these men having been selected, it seems to us that there are other men of '07 whose contributions to the world of science or business have been as great, who should be included. However, we didn't compile the biographies! And perhaps some of our members were overmodest and did not furnish the editors with facts regarding themselves. At any rate, this "roll of honor" makes interesting reading, and we congratulate our classmates who are making the world a better place to live in. — BRYANT NICHOLS, *Secretary*, 12 Newland Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, Commonwealth Shoe and Leather Company, Whitman, Mass.

1909

With this issue The Review year comes to a close, and your Secretary will have a vacation until next fall. But what news we have this month! You'd never guess. Jim Finnie was married on April 14 to Anna Grace Sjusted of Pawtucket, R. I. Jim says he got tired of representing the minority and since the majority seemed to be getting along pretty well, he thought he would join them. We welcome you, Jim, and your wife, with open arms.

John Willard's eldest daughter, Virginia, after graduation from Vassar in 1932, attended Shady Hill School, Cambridge, Mass., as an apprentice, and for the past two years has been teaching at the Oxford School, Hartford, Conn.

Carl Gram is on the Advisory Council for the Glee Club at the Institute. — At the annual meeting of the Ontario Pulp and Paper Makers Safety Association, held in the King Edward Hotel, Toronto, Canada, on March 15, J. N. Stephenson read a paper describing ancient methods of paper making and Pliny's remedies for wounds and other ailments.

In a former issue we stated that George and Mrs. Wallis were taking an automobile trip from Chicago to the West Coast. Speaking of his trip George writes: "Our first stopping point was Tulsa, Okla., and while there had a very pleasant and interesting visit with J. Stewart Pearce, senior member of the insurance firm of Pearce, Porter and Martin. Stewart reported a satisfactory upturn in business and showed me some of the elaborate announcements of their silver anniversary of the establishment of the company. Stewart has two daughters — Frances, 19, now enrolled at the University of Oklahoma, and Eleanor, 14, attending Holland Hall. At our next stop, Houston, Texas, I tried to arrange a short visit with

Arthur E. Hartwell, but due to a conflict in our plans I was only able to chat with him over the telephone. Arthur reported optimistically on business conditions, and evidently he was participating in the better feeling and general upturn which was noted throughout that section. Our motor trip ended at San Antonio, Texas, where we took the train to Phoenix, Ariz. *En route* the train stopped for awhile at El Paso, Texas, and I telephoned Frederick M. Heidelberg, and was sorry to learn of his recent illness, which had necessitated retirement from business activities. Fred has been in El Paso for 17 years, conducting a contracting business up to the time of impairment of his health. Due to the falling behind in my schedule on arriving in Los Angeles, the balance of our trip up the Coast to Seattle, including a visit to our factory at Toledo, Ore., and back through Denver and Omaha was hastened to the point where my time was unusually occupied. I hope, however, on my next trip to the West Coast that I will have an opportunity to look up some members of the Class and furnish some further news items for your column."

Lester King has recently received the appointment as Clerk of the Works on the Cloister Museum for the Metropolitan Museum of Art at Fort Tryon Park, New York City.

We have recently learned that Chet Pope was married on September 29, 1934, to Mrs. Marcia Bailey Voyne of Pasadena, Calif. For some years Chet has been doing a considerable foreign business, and in April he and Mrs. Pope were planning to sail on a two months' business and pleasure trip to England, Scandinavia, Holland, and Belgium.

I wonder if any of you saw in the daily papers recently Charley Belden's picture (with ten gallon hat) in the group of persons sponsoring Camel cigarettes. Charley has been ranching for several years at Pitchfork, Wyo., and apparently the life agrees with him.

Ridsdale Ellis writes as follows to Paul Wiswall: "As I told you, I was over in England last fall to see the British half of my family and also to see how England was *working* out of the depression while we are *spending* our way out (or in again?). They are smiling at our troubles and at their own success in pulling out of the mire. But don't mention war debts! I heard a gentleman described as a man who knows how to play a saxophone and doesn't. Well, a gentleman in England is one who knows England is in default and doesn't mention it. England is on the way out, but it is never going to be the England of pre-War or even the early post-War years. Along the quiet old country lanes lines of houses are being built stretching out into the country for miles. Old estates are being broken up and sold for taxes. The old *régime* of upper middle-class rule is giving way to labor representation. However, contrary to your early teachings, *some* of them have a sense of humor that has survived even a 25% or 30% income tax. It seems a man had to propose the health of the Queen, so he

1909 Continued

said: "Ladies and gentlemen, Her Majesty the Queen, the power behind the Throne. God Save the King!"

We regret to announce the death on April 22 of Alfred G. Kellogg, as the result of being struck by an automobile shortly after his return to Boston from Paris, where he has resided for a number of years. After graduating from M.I.T., he studied painting in several Paris schools, including the Beaux Arts. Returning to the United States, he taught art and painting at Groton and at the Fessenden School, at the same time maintaining a studio in the Fenway. He was connected with numerous art organizations, including the St. Anthony and St. Botolph Clubs and the Number Six Club of Technology. Kellogg is survived by his wife, Mrs. Helene Sigourney (Putnam) Kellogg, his mother, a sister, and two brothers. Services were held on April 25 in St. Paul's Episcopal Church, Brookline, Mass., of which he was a former member.

Nine of us had dinner together at Symphony Hall on the Monday evening of the Alumni Reunion in June:

Tom Desmond was over from New York for the Corporation meeting. He says he has fully recovered from his long illness of last year. — Mark Kelley, who is in the contracting business in Peabody, was also present, as well as the following from around Boston: Bill Jones from M.I.T., Carl Gram, Francis Loud, Ken May, Art Shaw, Henry Spencer, and your Secretary. — At the testimonial luncheon given to Professor D. C. Jackson on June 3, W. S. Rodman of our class, now Dean of Engineering at the University of Virginia, spoke of the happy connection between the Institute and the University of Virginia, due to the fact that President Rogers came to Technology from Virginia. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. *Assistant Secretaries*: PAUL M. WISWALL, MAURICE R. SCHARFF, New York; GEORGE E. WALLIS, Chicago.

1910

By the time you read this, our Twenty-Fifth Reunion will have passed into history, but it hasn't happened yet, so I cannot write about it. I've had plenty of brief notes in connection with the answers to my plea for contributions, but few long letters. Here is a letter from Allen Gould to Herb Cleverdon that will be of interest: "I have been receiving your good reunion literature and also that of Dudley Clapp and it is about time I responded. It is good to know that 1910 has such an able reunion committee and chairman. I still am up in the air as to whether I am going to be able to get to Boston at that time, but I enclose a small check to help grease the ways, so to speak, and I hope I shall be able to look in on at least a part of the festivities."

"I am still carrying on my steel business and with the other hand, part time, am nursing along an infant industry, a very interesting process which I ran across about two years ago. Since then we have incorporated and are operating

as an engineering and patent holding company, licensing established concerns who are outstanding in their particular field, and we are already making considerable progress. The process takes the dangerous fine dusts out of the air in foundries, rock products industries, and so on, where silicosis hazard is now much in the public eye, and we are going after a lot of other applications, such as underground mining operations, cleaning of blast-furnace gas, taking fly ash out of stacks burning powdered coal, recovering valuable metallic dusts in the smelting industries and the explosive dusts in the grain milling industries, and so on. Lots of fields to go after, and I feel more than ever like an engineer again when we get tests going in the laboratories out at Case School of Applied Science, which smells remarkably like the good old Walker Building.

"What is putting uncertainty into my reunion plans is a prospective trip to Europe. We have some foreign patents already issued and some more pending and I am slated to take a quick trip over in the near future to get some commercial arrangements made over there. Even if the trip does not actually overlap the reunion dates, I am going to have difficulty breaking away for anything else. It is a very tempting layout you have arranged and I hope something may work out.

"Please give my very best regards to all the men on the committee. We had a good gang in our Class. It's too bad and almost unbelievable that 25 years have slipped away with so few get-togethers and we ought to do better in the next 25. Except for clothing, you had not changed much in 1930 from the day in Bar le Duc in 1918, and I expect I will have no difficulty in recognizing you, if I make it in June."

Carl Sittinger is in New York most of the time, although his family is still in Winchester. He was ill most of last year but is better now, and expects to be at the reunion.

Eldon Clark writes from Detroit: "I have received several communications with regard to the class reunion which comes the first part of June. Unfortunately, I will not be able to attend, as much as I would like to be present. — Business has been rotten, but just now we are having a spurt which will extend beyond the date of the reunion and it is necessary that I give any business which we have on hand all the attention possible. In addition, my son graduates from Albion on the 3rd of June, and, of course, I am planning to be present at his graduation. I am getting to feel pretty old to have a boy graduating this year and a girl graduating from Michigan State College, I hope, next year. It is rather unfortunate and inconsiderate of my children to tie me down in such a manner that I cannot attend the Twenty-Fifth Reunion. I hope that you will remember me to all of our mutual friends, and that you will give my best wishes to those who attend and with whom you may come in contact."

A very clever rhyme comes from Hale Sutherland who cannot come on as he will be busy starting the summer sessions

at Lehigh, where he is Professor. — DUDLEY CLAPP, *Secretary*, 40 Water Street, East Cambridge, Mass.

1911

This month's chronicling starts with two sad notes — the death of a popular classmate, William J. Buckley, VI, and that of one of 1911's best friends during and since undergraduate days: Dr. Alfred E. Burton, our former Dean.

Bill Buckley, sandy-haired, always buoyant, youthful still in appearance and action, died March 10, at his home in Wollaston, while Dean Burton died two months later. Your Secretary attended the latter's funeral at Waban on May 14 and sent flowers in the name of the Class. How glad we are that we had him for our Twenty-Year Reunion guest at Douglas Hill. His son told me he never forgot the joys of that week-end.

One of the biggest and best class dinners we have had in years was held in the Silver Room of Walker Memorial, April 12. Billed by Jack Herlihy as a Welcome-Dennie-Back-to-Massachusetts affair, it attracted 17 men! We had one of Pancho Bridges's usual fine dinners and then had such an interesting gab fest that we never did get to bowling.

Here are the stories, alphabetically: Oberlin Clark, II, left the building-construction game some time ago and became a partner in the Nelson Cement Stone Company, Braintree, manufacturers of concrete products. He is one of the comparatively recent benedicts and has no children. — Marshall Comstock, VI, has been, and is, selling electrical equipment for Wagner Electric Company, Boston. He is married and has two girls, 17 and 15, and a boy, 10. The oldest daughter is entering Radcliffe this fall. — Art Coupal, II, a bachelor, is still with Hersey Manufacturing Company, South Boston, and lives in Medford.

A. V. de Forest, XIII, is a Professor in the Mechanical Engineering Department at M.I.T., engaged in research of a most advanced character on strength of materials. He predicted a brilliant future for the Mechanical Engineering Department under the splendid leadership of Jerry Hunsaker '12. A. V. is married and has a boy, 21, and a girl, 19. — The Secretary is particularly happy in his congenial work as Promotion Manager of the Hotel Bancroft, Worcester, is married, and has three children: boys, 17 and 10, and a girl, 14. His oldest boy, Orville, Jr., won a state-wide, prize-speaking contest at the University of Maine against competitors from 56 other schools in early April. He is a junior at North Yarmouth Academy and plays first base on the team there. — Bill Goodhue, I, is the Assistant Engineer on Road Construction for the Metropolitan District Commission and works throughout a 25-mile radius of Boston. He is married and has a daughter, 22, who was graduated from Radcliffe in 1934. — Jack Herlihy, II, is head of the supply department of the Boston Edison, involving supervision of a \$1,500,000 stock. He is married and has two boys, 17 and 14, and a girl, 14. Jack's oldest boy enters

1911 Continued

Tech this fall. — Roger Loud handles sales of electrical equipment for the Boston Edison, is married, and has two boys, 13 and 10. We just discovered at this dinner that three years ago, that is, right after the eclipse, he became interested in astronomy and with the aid of his big boy has built a six-inch telescope, with which he and his family have much fun and interest.

Charlie McManus, bachelor, is on highway construction with the Massachusetts Public Works Department. Ted Parker, I, left Stone and Webster two years ago and first worked with and then succeeded Colonel Gow as State Engineer for the PWA in Massachusetts. He is married, has one boy, 20, a junior at M.I.T., and a girl, 12. — Chet Pepper is now Field Secretary for Burdett College and as he said: "If you want a good girl, come to me." He is married and has a daughter, 15.

Carl Richmond, I, is, and has been for a long time, with Arkwright Mutual Fire Insurance Company in Boston. He travels the Eastern Coast States. Carl was married shortly before the 1930 Reunion and has two boys, one four years, the other 15 months. — O. W. Stewart, I, is now assistant general manager of the general inspection department of Factory Mutual Fire Insurance Company and, like his pal, Carl Richmond, has a penchant for amateur photography — and, boys and girls, they both do some splendid work! O. W. is married and has four boys, 17, 15, 12, and 8.

Norman Wade, II, is engaged in the steam-heating division of Boston Edison, is married, and has two girls, 11 and 8. — Emmons Whitcomb is running his own Whitcomb Travel Bureau and has become one of the best-informed men in the East on air transportation. He gave us quite a talk about commercial aviation of today. His boy is now ten years old. — Gordon Wilkes, II, is a full Professor in the Mechanical Engineering Department at the Institute, is married, and has two boys, 18 and 12. His oldest boy is in the Class of 1937, M.I.T. — Alec Yereance, I, is assistant manager of the Boston office, Mortgage Loan Division, of the Prudential Insurance Company. He is married, living in Belmont, and has a daughter, 14.

Double honors have come to Franklin Parker '36, Ted's oldest boy. He is 1935-1936 Treasurer of the M.I.T. Athletic Association and in April was elected captain of the hockey team for next year. I ran into Ted at New Bedford in mid May at a convention of the Massachusetts Reserve Officers Association, my presence being in an effort to have them meet in Worcester within the next year or two.

Tommie Haines, II, superintendent of distribution for Boston Edison since 1925, had his jurisdiction enlarged on May 1 to include the installations department. Tom is widely known in the utility industry for his national committee activities and contributions to economic analysis in his special field.

The Boston *Sunday Herald* of May 5 carried an interesting interview with Van Bush '16, Vice-President and Dean of Engi-

neering of M.I.T., including an interesting pencil sketch of this human dynamo. In the course of the interview, Dr. Bush paid the following tribute to our own A. V. de Forest, XIII: "He is making significant researches on stresses and strains and surface tensions in the fatigue failure of metals. When metal breaks, it is not a sudden break, but more frequently the result of accumulated fatigue. If the steering knuckle on your car goes, it has been getting ready for some time. The piece of metal may be perfectly strong, but gives way because its surface fails. For instance, a plate of glass may withstand an awful drubbing, but if you scratch the surface, you can break it easily. We expect the findings of this research to be of considerable importance industrially."

Ted Van Tassel, X, has forsaken the leather industry, as such, and hid himself and family westward, where he is now in charge of maintenance for Hiram Walker Sons, distillers *par excellence*, at Peoria, Ill., thus associating himself with his S.A.E. fraternity brother and classmate, Lloyd Cooley, X.

In mid May the Back Bay district of Boston had four spectacular robberies in quick succession one afternoon, the unusual methods of the three bandits earning for them the appellation "strip bandits." One of the offices visited was the Whitcomb Travel Bureau, where they robbed Emmons of his day's receipts, \$400. Whit and his three office girls were covered by two guns and backed into a rear room. Here they were made to strip to their "undies" and their wrists were tied securely. After stealing money from Whit and jewelry from the girls, the bandits made good their escape. At the slam of the door, Whit managed to open the back door of his shop and make his way in his stockings and underwear into the florist shop next door. The proprietor released his arms and they went back to Whit's and released the girls, then called the police. At this writing (May 24) no trace of the robbers had been made. That sure was a tough blow, Emmons, and we sympathize with you in your loss of money. Keep smilin'!

In mid April it was your Secretary's pleasure to meet and talk with His Excellency Harashito Saito, Japan's 48-year-old ambassador to the United States, when he came to Hotel Bancroft to address the Worcester Foreign Policy Association. He knew our two classmates, Kanezo Goto, II, and Ewazo Suzuki, X, and told me that Goto, retired from the Japanese Navy with the rank of Rear Admiral, is now with Nihon Dempa Company, Ltd., 38 Datemachi, Snibuyaku, Tokyo, Japan, while Suzuki is with Taiyo Soda Company, Sanchoe Sakae Machi, Kobe, Japan. Saito is an outstanding diplomat and a fine conversationalist. (See *Time*, May 18.)

Two of our classmates have changed their forms of signature: Otto Schurig, VI, is now O. Robert Schurig, 1006 Union Street, Schenectady, while Alberto de Romano, VI, is now Albert L. de Romana, Calle de Santa Marta 209, Arequipa, Peru, S. A. — Speaking of South America,

after a fine visit at his old home in Hingham, Mass., Rudolph Emmel, III, has returned to his mining profession where he may be addressed care of George A. Powell, Casilla 655, Guayaquil, Ecuador, S. A.

Coming North, we find that Austin Brooks, VI, has shifted from Balboa Heights to the Northern Division, Municipal Engineering Division, Cristobal, Canal Zone. In sending in his regrets for the April class dinner, Morris Omansky, V, with Arthur D. Little Company, Cambridge, said he is "experting" in litigations these days, which involves researches to discover the facts. Ralph Sawyer, XII, has left Bath, Maine, and is now connected with the office of the State Engineer Inspector, Phenix Hotel Building, Concord, N. H. And, oh yes, I saw Bill Coburn, XI, and his wife here at the Bancroft at the Hunt Ball of the Worcester Horse Show in April. Bill's horse won ribbons at the Show.

Other new addresses: Walter Arthur, V, Reeds, Mo.; Paul Burdett, II, 18 Oliver Street, Boston, Mass.; Raymond T. Cole, II, Box 48, Newcastle, Maine; Sterling B. Dyer, 50 Clover Street, Belmont, Mass.; and James F. Johnson, Essex County Vocational Schools, Sussex Avenue and First Street, Newark, N. J.

So endeth another volume of 1911 notes in *The Technology Review*. As always, it has been one of the happy duties of my career to compile and present them and, in closing, I bespeak you particular co-operation this next volume, because in June, 1936, we will be the Twenty-Five Year Class, believe it or not! Make your plans *now* to set aside the week-end of June 5-9 (Friday to Monday), 1936, for then we will have our Twenty-fifth Reunion and — HOW! — ORVILLE B. DENTSON, *Secretary*, Hotel Bancroft, Worcester, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1912

It was an enthusiastic and happy group of classmates who attended the spring dinner of the Technology Club of New York. Twelve members gathered around the table we had reserved for "1912": George H. Rhodes, II, A. L. Loebenberg '13, X, Page Golsan, VI, W. G. Cole, I, C. B. Vaughan, II, John W. Connolly, I, E. M. Mason, VI, H. H. Brackett, VI, C. L. Gabriel, X, J. I. Murray, VII, E. T. Marceau, X, and D. J. McGrath, I.

How do our classmates look 23 years after graduation? Well, this bunch struck your reporter as a mighty fine looking and, we hope, representative showing of our Class — not much changed, as far as our memory of June, 1912, could envision them. They were a little heavier perhaps, a little more serious, at first, but thawed out rapidly as friendships were renewed. None were bald, but a few had slightly graying hair. Connolly and Gene Marceau wore close-cropped mustaches; the rest were smooth-faced. Nearly all smoked cigars; one, a pipe. Someone said that Brackett bore a remarkable likeness to Will Rogers; another saw in Gene Marceau a likeness of Lowell Thomas.

1912 Continued

What are they doing? George Rhodes has been handling important work in the development department of the National Biscuit Company, with which he has been connected for many years. Loebenberg is a Vice-President of the Barrett Company. Page Golsan is a Vice-President of Ford, Bacon and Davis. W. G. Cole is with the Metropolitan Life Insurance Company. Vaughan is taking things easy after many years in South America. Connolly is Manager of the Fuel Oil Division of Standard Oil Company of New York. Ed Mason is in charge of a division of the foreign operations of Standard Oil. Brackett is one of the operating engineers of the New Jersey Bell Telephone Company. Charlie Gabriel is a Vice-President of Commercial Solvents. Joe Murray is manager of the Eskimo Pie Corporation of New York. Sounds like a roster of American business and industry, doesn't it!

They all expressed lively interest in a 25-year reunion. In fact, they all signed a paper pledging themselves to attend, provided prosperity returns and their wives permit. — Page Golsan reported that Clarence Morrow, IV, is also with Ford, Bacon and Davis, working in the financial phases of the engineering subjects that organization deals with.

Reports were received from several members who were prevented from attending by prior engagements or by absence from the city. Eric Kebbon, IV, wrote from Washington, D. C., that he is temporarily domiciled there, designing post offices for the Government. He has designed three postal stations to be built in New York City, he says, one of which is already under contract for construction.

We are glad to be able to report a visit with Jesse Hakes, I, who was in New York recently on a business trip from Baltimore. He reports that his manufacturing business is picking up and things generally look better. Jesse is doing well, and has reason to be proud of the way he has built up a business of his own, and carried it through the past five, tough years. He reports having been in Washington where he saw Kebbon, David Guy, I, and Clarence McDonough, I.

Your Assistant Secretary and family, visiting Washington this spring, had the pleasure of an unexpected meeting with Mr. and Mrs. Ralph M. Ferry, II, and their son, who likewise were sight-seeing in the Nation's capital at cherry-blossom time.

Our appeal in the May issue, wherein we urged our classmates not to make us wait until we have to write an obituary to hear something about them, produced results. Captain Harold C. Mabbott, II, writing from Fort Leavenworth, Kan., heads his lively epistle: "This is not an Obituary." He goes on to tell us that he can't attend Alumni Day in Boston this year because Uncle Sam won't let him. "As you know," he says, "I am a school-boy at the Command and General Staff School at Fort Leavenworth (not the Big House) and school is not over until the 20th of June. My family remains the same in size. One daughter entered college last

September and another, or rather the other, will join her this September. I am looking forward to the new edition of the 'Register of Former Students' to see if there are any '12 men in this part of the country. I was glad to see word of Harold Griffin in the last Review, as I hadn't heard of him for years. If any of the class members are out this way, I wish they would look me up. We have a fine golf course in the front yard and I could fix up a game, although I don't play myself. I hope to take up the game again this summer. For those who like to ride, I can get horses, and riding is one thing I can do after a fashion. I expect to be here another year and will probably go on foreign service a year from next month. I had expected to go this last year, but was lucky to be sent here. We are supposed to learn now to fight on a big scale out here. It is interesting, but keeps one's nose to the grindstone. Hope you can get a good bunch together at Boston; we still remember the last five-year reunion with great pleasure. Regards to all."

Harold G. Manning, X, sent in the following clipping from the Waterbury *American* regarding the son of Walter P. Green, I. "Walter Perry Green, Jr., of 15 Plank Road, has had the highest possible undergraduate honor conferred upon him at M.I.T. He has been elected an associate of the Sigma Xi. The student members are elected on the basis of scholarship and promise in research. He was graduated in June as a chemist and is a graduate of Crosby High School." — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. DAVID J. McGRATH, *Assistant Secretary*, McGraw Hill Publishing Company, Inc., 330 West 42nd Street, New York, N. Y.

1913

Occasionally a member of the Class appears prominently in the public press. The latest one to receive this distinction is Charles Edison of East Orange, N. J. He has just been appointed by President Roosevelt to the National Industrial Recovery Board. The following is in part from a current newspaper clipping: "The White House made public this telegram from the President to Edison: I am announcing your appointment as a member of the National Industrial Recovery Board to fill the vacancy caused by the resignation of Arthur D. Whiteside. In conformity with your request, you will not be asked to serve beyond July 1, and during this service you will be relieved, so far as possible, of your duties as State Director for the National Emergency Council for New Jersey. I appreciate very much your willingness to undertake this additional public service."

Howard Currier is now receiving his mail at Lansing, Mich. — Effie MacDonald is about to receive her M.D. degree from Tufts Medical School and is to go to the Margaret Pillsbury Hospital in Concord, N. H., by the middle of the summer. — The Westinghouse Electric and Manufacturing Company has transferred John B. MacNeill from Pittsburgh to their Boston office. — News has come

to hand that Sam Rogers has forsaken New England and is now living in Newark, Del.

A small but highly enthusiastic class dinner was held, May 16, at the Hotel Commander in Cambridge. Eleven of the faithful gathered for one of the most delightful meetings ever held by the Class. Especial mention should be made of the fact that Larry Hart took time from his very busy job to spend the evening with the group, leaving on the midnight for New York. Bill Eichorn drove up from Providence and, according to his statement, was well repaid for his trip. Others who attended were Pa Ready, Bill Mattson, Ken Hamilton, Phil Capen, Phil Terry, Charlie Thompson, Bob Portal, Joe MacKinnon, and Al Townsend. Our genial President, Bill Brewster, had intended to be present, but a telegram was received from him earlier in the day, stating that he was delayed in Welland, Ont., and could not make the grade.

After the dinner, one of the Edgerton movies was shown, as well as one of the new films from the Electrical Engineering Department. — We regret to announce that four members, after definitely stating they would attend the dinner, failed to show up. We feel that they missed a real good time.

A pleasant and prosperous summer to you all and let us hope that by fall you will condescend to write to the Class Secretary once in a while. — ARTHUR L. TOWNSEND, *Secretary*, Room 3-435, M.I.T., Cambridge, Mass.

1914

At the meeting of the Corporation on June 4, our President, Buck Dorrance, was elected a Term Member for five years, he being one of the three successful nominees on the recent Alumni Association ballot. This new honor is just one of a score that have come to him in recent years in the way of being elected a director or trustee of some business, philanthropic, or educational project. We are all distinctly proud of having him as one of our intimate associates.

The schedule of these notes makes it impossible to include in them a report of Alumni Day activities. They will appear in the first fall issue. In addition to the official plans, we have completed arrangements for a 1914 get-together at the Eastern Yacht Club and Salem Country Club. A very encouraging list of people away from Boston who are coming indicates the general enthusiasm for this new Alumni Day plan.

Will wonders never cease! O. C. Hall gave as his official reason for being unable to get up to Alumni Day the fact that he had to stay home and admire the latest arrival in his family, a daughter, Elizabeth, who arrived April 25. O. C. is so set up over the new daughter that he even quotes Gilbert and Sullivan to explain why he cannot attend.

Another who had to send his regrets is E. C. Wenthe. Unfortunately, his work at the Bell Laboratories, in New York, required him to leave for Hollywood just in time to miss Alumni Day. Wenthe, as

1914 Continued

you all know, is one of the country's real authorities on acoustics, particularly pertaining to horns and loud speakers.

The April issue of *Army Ordnance* contained a very splendid article entitled, "Europe Looks at Chemical Warfare," by Captain Alden H. Waitt, of the Chemical Warfare Service. Alden has been very active in matters pertaining to Army publications, at one time being Editor of the *Chemical Warfare Journal*. He is now stationed at the Edgewood Arsenal, at Edgewood, Md., but expects to be transferred during the current summer to the Command and General Staff School, at Fort Leavenworth, Kan.

Bob Patten wrote a very interesting letter telling of his work with the Edison General Electric Appliance Company, in Chicago. Bob's specialty has been in large heating units for industrial use.

Charlie Oleson, who is located in Dallas, Texas, has written in to report — ten years late — the arrival of a third daughter. Charlie said that, during a recent visit of Dean Lobdell to that section, at one of the meetings, he, Charlie, saw Bob Peatross and Berger '15. On the same trip of Lobdell's he met C. W. Ricker, who is a professor at Tulane University, in New Orleans. Rick's principal concern seemed to be to have it reported back to your Secretary that he got by Mardi Gras safely again this year.

Very frequently in the summertime classmates whose homes were in Greater Boston and who are now scattered throughout the country get back to Boston. As your Secretary is located only a few minutes' walk from the Technology buildings, it is suggested that you try to include a visit to him if you get to Boston this summer. His daytime telephone number is TROwbridge 4400. — H. B. RICHMOND, *Secretary*, 30 State Street, Cambridge, Mass. CHARLES P. FISKE, *Assistant Secretary*, 1775 Broadway, New York, N. Y.

1915

When you are reading this, we shall have had our Twentieth Reunion, detailed reports of which you will get in the first issue of *The Review* next fall. Ray Stringfield organized a Twentieth Reunion Dinner in Los Angeles for the gang out there, and this, too, looks like a good time.

This issue closes what has been a very successful year for class notes. — The reunion correspondence has brought many interesting letters and reestablished many contacts with classmates from whom we have not heard for some time. The key men appointed in the geographic centers have done noble work in lining up the men assigned to them.

Jerry Coldwell is striving to get here from all over the country. In his last letter he wrote that in flying to Chicago, the first of May, he had the doubtful pleasure of being lost in the fog for over 25 minutes. It was the same kind of plane and the same night as the bad crack-up in Kansas City. Jerry is very daring in his flying, and I hope he lands safely at the reunion.

One of our good breaks is to have Douglas Baker coming from Paris, France, Arthur Ball from Los Angeles, Allen Abrams from Wisconsin, and Bill Spencer from Baltimore.

Carl Wood of Winchester, Mass., who planned to catch on the Ball Club and take movies, was severely injured in a motor accident, getting a broken shoulder. If he recovers in time, he said that he would come to the reunion.

The dashing McCeney Werlich writes from Paris: "I wish I could go to the reunion, but Paris holds me just the same. I shall officiate at the occasion with an extra spot of champagne. Best to you all!" The same old McCeney, but with our recent change in the law that crack about the champagne no longer worries us.

Louie Zepfler writes that at the inaugural dinner of the M.I.T. Club of Northern New Jersey at the Down Town Club in Newark, March 15, among the 300 Alumni the following men were present: H. I. Lewis, Wolcott, Loveland, Toabe, Fry '16, Marion, Wentworth, Stearns, and himself. He said that it was an interesting affair with speeches by Dr. Compton and others.

From his travels, Wilbur Swain writes: "Holly Gee, your dues letter is dated early October. The time she do go, and the dull times continue for me. As my check is not much good, I am enclosing some dollar bills. I have not given up hopes of better times, but believe that the spring after election will start the genuine upturn. Best wishes for a most glorious Twentieth Reunion. I shall not be there. I have not seen you around the beat."

Greville Haslam is headmaster of the Episcopal Academy at Overbrook, Pa., and wrote the following letter: "I have just received the notices of the Twentieth Reunion of the glorious Class of 1915 and find it impossible to express my sentiments on the limited space of the reply card. The fact is, I have been counting for about 10 years on getting to our Twentieth, but it appears at the moment that I am hooked, so that I cannot do it. This is the 150th year of this school, of which I am at present helmsman; our graduation comes on June 4, the Varsity Club banquet on June 3, Faculty meetings, votes on prizes and graduation on May 31 and June 1. Having been through this a dozen times before, I know that this particular 150th, with all its additional anniversary flavor, will be more entangling than usual, and I guess I have just got to stay here on the job.

"I wish you would pass on to the crowd my heartfelt expressions of regret, because there are some fellows I would certainly have gone further than Saybrook to have seen. I was graduated from there with Don Perin, substituted on the football team with you, Johnny O'Brien '16, Howlett, and others, collected the intercollegiate rifle championship with Brandt, and had lots of fun criticizing Piza's architecture, which must have been pretty good after all, because he is an architect and I am not. — Give them

all my hearty greetings and tell them I am filled with grief because I cannot be there. I will have to arrange things differently in 1945."

Harold B. Pickering is living at 203 Highland Avenue, Ithaca, N. Y., and is selling stokers and oil burners, and is so busy that he couldn't get away for the reunion.

Dr. Stanley H. Osborn has just been reappointed by Governor Cross of Connecticut as State Commissioner of Health. He will serve for six years more in a position which he apparently has already filled very satisfactorily.

Look for the opening fall number of *The Review* for details of the Reunion. My best personal regards to you all, my thanks for your cooperation during the past year, and my best wishes to you and your families for a happy and enjoyable summer. — AZEL W. MACK, *Secretary*, 72 Charles Street, Malden, Mass.

1916

The following comes from George W. Repetti: "Some time ago I received your note asking about my change of address. It entails no change in occupation. You may list me in *The Technology Review* as Vice-President of the Holly Sugar Corporation, Colorado Springs, Colo.

From Meade Bolton at the Canal Zone: "My ankle continues to be swollen and uncomfortable. I suppose when one gets beyond middle age injuries take a long time to heal. However, X-rays show that the bones have knitted perfectly and indicate a complete recovery in time." It will be recalled that Bolton suffered a bad fracture months ago. We are glad to learn he is on the mend, but we don't quite get that "past middle age" stuff. At any rate, the disability has not stopped the flow of his interesting contributions to the notes from the Technology Club of Panama.

The Franklin Institute of Philadelphia has announced the award of the John Price Wetherell Medal for 1935 to Robert E. Naumburg, II, of 333 West 56th Street, New York City, for his invention of the visagraph for enabling the blind to read any ordinary printed book. The award is made for an apparatus, original in its accomplishments and of unquestioned benefit to humanity.

All classmates will be pleased to hear from Ralph Millis as follows: "I answer your letter a little over a month late — which you would not consider so bad if you knew my average for personal letters. Here are some of the answers: What doing? I am what is called the military assistant in this Engineer District (Corps of Engineering, U. S. Army). When the District Engineer is not here, I act as 'it' — and when he is here, I don't always know just how to act. I have to do various odd jobs, some of which are engineering and some military. One of the latter is to go to various meetings of organizations and tell about the Army. The main job for which we are here is the improvement of rivers and harbors. In this district it now con-

1916 Continued

sists of operating several dredges and snag boats in the Georgia rivers, as well as in the Intracoastal Waterway (the 'inside route') which skirts the Georgia coast on its way from New York to Florida. Doubtless, the yachts of our wealthy classmates pass the dredges which I help to operate many times each winter in this stretch of the waterway. We are also building a navigation dam in the Savannah River not far below Augusta, Ga., as part of a project to give much better navigation facilities up to Augusta.

"Family? One wife and one daughter, aged one year and one week (that is, the daughter is — not the wife and daughter, respectively). Name of wife is Elizabeth; of daughter, Catharine McDonald Millis. And, incidentally, she's the finest baby you ever saw, barring only the Shepard children.

"Hobby? Building ship models and sailing small boats. I don't get as much of the latter as I would like, since the transient nature of my job (not to mention other causes) makes it hard to own a boat. In these parts, I also make a hobby of drinking Georgia corn, but only in small doses.

"And — I'm mighty glad to hear from you again, and to have the chance to show that I'm not entirely lost as far as class affairs go. I have not been around Boston since 1920, and it always seems too far to go to reunions; besides which, being married seems to give one a number of things he wants to do (and I really mean *he*, not his wife) which makes it harder to get to reunions. But I sure would like to get up on the New England coast again in the summer time, reunion or no reunion. It seems to me that I never run across any Tech men, except sometimes those of classes from 1925 on, and they do not know much about the Tech I knew. Probably it's my own fault for not chasing around and looking some up, but even among the older men, I must confess that Tech men as Tech men do not always appeal. What I should really like is to meet some of those I knew when there — like you." — HENRY B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, Bemis Bro. Bag Company, Memphis, Tenn.

1917

A member of the group at the annual Alumni Dinner was upset because proper publicity was not given all the heroic souls who attended. Here is the complete group gathered for this column by one of our young men and published by special sanction of the editors: Kenneth E. Bell, Rudolph Beaver, R. H. Blanchard, H. V. Chisholm, A. D. Dickson, A. P. Dunham, F. Leslie Ford '24, Laurence Gardner '14, A. E. Gilmour, Francis Goodale, Stanley M. Lane, H. E. Lobdell, H. J. McDonald, T. F. O'Brien, H. F. Powers, H. L. Wood.

I recently saw E. B. Stockmann, who is now purchasing agent for Consolidated Gas Company of New York, and Robert J. Marlow, who closed an order for air-

conditioning installations that morning in three theaters involving \$100,000. I also saw J. F. Maguire and W. I. McNeill who formed the new Technology Club of Northern New Jersey. All four planned to come to Boston for the June reunion.

On May 4, the Institute again held Open House, a reception to future students and their parents and friends that has become an event of recognized importance and interest. The affair was brightened this year by the presence of Willard L. Pryor of Rochester with Jack Wells '16, plus a young hopeful apiece. Art Keating appeared, minus the hopeful, and reported on his contact with Les Hoffman.

Lewis Douglas has been giving the Godkin lectures at Harvard, reported at length in the Boston press, and stirring considerable interest. We had hoped to have him with us on the Alumni Day party but Ham Wood, as General Manager of the Reunion, reports him as scheduled for an Adirondack canoe trip at that time. Almost simultaneously with the Godkin lectures, our former Assistant Secretary of the Navy, E. P. Warner, has been giving a series of lectures at the Institute. John Holton of Carrier York air-conditioning organization has also been on the Institute grounds seeking a "couple of fresh-laid graduates." Gilbert Hunt's son, back as an undergraduate, is devoting his energies this spring to physics rather than tennis. He is reported good at scholastics as well as athletics and, incidentally, to have become national collegiate runner-up last year, playing barefoot.

A letterhead of the Inland Daily Press Association has come to our attention and we are reminded that the President, Linwood I. Noyes of the *Globe*, Ironwood, Mich., heads the largest and oldest regional daily newspaper publishers association in America. The Association recently celebrated its 50th anniversary with an attendance making the largest gathering of daily publishers ever held in the Middle West, and a representative from member dailies in 20 states. Lin is also a member of the Code Authority of the daily newspaper publishing business, chosen to represent the newspapers in these same states.

Our most recent informant of Mr. Noyes's achievement is also a member of the Association and he reports that in his long contact with it he has never known a more popular publisher to achieve the office of President. Not so long ago we had a letter from Lin himself. He had been in New York, where he had a fine visit with I. B. McDaniel who won the New York Mayor's cup at contract bridge last year and with his wife won the Westchester tournament. — RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

1918

The lilacs are arrayed in robes of white and regal purple, but when these random reflections reach you that glory will have

given way to playing with cap pistols or reducing five-inch salutes to shabby elegance.

For sheer loyalty to the Class of 1918, we nominate Malcolm Eales as number one holder of the spreading palm. No one has done more to keep the New York brethren aglow with the take-me-back-to-the-Institute spirit. Where others only smoldered, he has been aflame. So, in his hours of solitude we bespeak your expressions of fraternity for his long-continued interest in us. For weeks, Mal has lain horizontal, unable to see visitors, or to lift a finger. Anna and the two youngsters have been wonderful through it all. In accents so earnest that you cannot refuse, I beg you to write him tonight. Don't put it off. The address is 43 Fulton Street, Bloomfield, N. J.

With a blare of trumpets which fairly shouted the unquenchable in mankind, Don MacArdle paraded into our office amid all the thunders of the Gulf Refining Company's sumptuous advertising material. Don is now somewhat bald, sports a Charlie Chaplin mustache, thereby sanctifying his right to swear by the beards of his ancestors, and smokes the same old pipe with sagacious moderation. Alpha, sez he, is now in kindergarten; Beta will soon be in kindergarten. Nomenclature, be it noted, has, on second thought, been changed from Alpha and Omega to Alpha and Beta. Don's roistering activity uses Foot of Pier Street, Yonkers, N. Y., as an axis of revolution. We record, tearfully, an unsuccessful attempt to get a sample gallon of that good Gulf gasoline out of him.

After all these years of flaunting an unearned Harvard degree, preceded by those undergraduate twinges, at once comical and terrifying, that the institution up river (though twice as old in 1775 as we now are) just missed our virility, our robustness, our magnificent capacity to work — after all these years, it is a cleansing and humbling experience to be invited to participate in a summer school seminar for the Graduate School of Education. Fellow contributors include Stuart Chase '10, Frances Lester Warner, now wife of Mayo D. Hershey '09, and ex-Governor Winant of New Hampshire, but lately appointed to the International Labor Office at Geneva. Now, if it were only true that a man is known by the company he keeps!

(Since these notes were written, we have had news that Mal Eales died on May 24.) — F. ALEXANDER MAGOUN, *Secretary*, Room 4-136, M.I.T., Cambridge, Mass. GRETCHEN A. PALMER, *Assistant Secretary*, The Thomas School, The Wilson Road, Rowayton, Conn.

1920

Since the closing date for these notes is a week in advance of the Class Reunion, all I can do is predict that the Reunion is going to be a whale of a success. We have received word from over 40 members of the Class that they will surely be there and we expect a total attendance of be-

1920 Continued

tween 40 and 60. Complete news of the event will appear in the next issue of The Review which comes out in October.

In connection with the Reunion, we had an interesting letter from Ed Farrow. Ed is assistant production manager of the Eastman Kodak Company at Rochester, N. Y. On March 15 he became the father of twins, a boy and a girl, and since he already had one of each he says that this makes a 100% increase and a record for the Class of 1920 to shoot at. Don Dowling was married May 25 and sailed for Bermuda, which seems to us a legitimate excuse not to attend the Reunion. Don's address is 135 Prospect Street, Ridgewood, N. J. Erwin Harsch is with the Tennessee Valley Authority, address 1731 Laurel Avenue, Knoxville, Tenn. John Bartholomew is now with the Eaton Manufacturing Company, 9771 French Road, Detroit. Frank Hunt is with the Liquid Carbonic Corporation in Chicago. He says that they are so busy expanding that he doesn't know whether he can get away for the Reunion.

We have interesting news of Livingston Wright, III. He has been running, single-handed, a little prospect mine near Steamboat, Nev., and he and his wife and small son are living about five miles from the nearest neighbor. One time this winter they were shut in by snow for ten days and a rescue party was sent to them from Reno. When the party arrived they found that although their supplies were getting low, they were still healthy and had enough to eat. — Herbert Fales '19 was married May 4 to Miss Margaret Davenport Page, daughter of Dr. and Mrs. Calvin Page and a graduate of Mount Holyoke College. The Fales will live in New York.

Francis Bunker is now in West Hollywood, Calif., 9049 Steele Place. Freeman Dyke is in Steubenville, Ohio. Eric Etherington may be reached at 29 Proctor Boulevard, Utica, N. Y. James R. Griffith has been made a Professor at the State College of Oregon, Corvallis. Bob Rowe has gone to Chicago, 6251 Sheridan Road. Bob Tirrell is with the Deutsche Vacuum Oil Company in Hamburg, Germany. Frank Wilcox is now in Beverly Hills, Calif. Ed Brickett has left Ohio and is now in North Chelmsford, Mass. Scott Carpenter is now in Southboro, Mass. Ray Davis' address is 19 Summer Street, Ashland, Mass. Homer Howes is now in Clayton, Mo. We are hoping he will get to the Reunion. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

1921

In closing another year of recording the activities of the Class, we wish to express our thanks for the generous aid and kind coöperation which we have received throughout the volume of The Review now ending. Members of the Class have responded most encouragingly to our requests for news, which has considerably lightened our task and vastly increased the pleasure to be derived from it.

We cannot close this chapter of our history without recording a belated item which has just come to our attention.

"The Book of Life has opened for William T. A. Reinhard on January 24, 1935, weight 7 pounds 1 ounce." Our best wishes to Mr. and Mrs. Herbert W. Reinhard out in Chicago and a big welcome to Master William.

Some sort of special acknowledgment is due Professor Locke for his frequent notes. Under date of April 24 he writes: "Howard LeFevre is now located with Best Brothers, Keene's Cement Company of Medicine Lodge, Kan., with his headquarters at the Philadelphia warehouse, Rising Sun and Venango Streets, Philadelphia. He took this job a short time ago, after having been for many years a salesman for a silver manufacturing concern in Attleboro and more recently with the Gulf Refining Company in Providence, R. I. His work involves the set-up of sales agencies covering the district of Eastern Pennsylvania, Maryland, Delaware, and Virginia."

Ray and your Assistant Secretary have already had one meeting to make preliminary plans for our Fifteenth Reunion next June, just prior to Alumni Day (1936). Your suggestions will be welcomed as to meeting place and program. Send in your notes and comments now. A pleasant summer to all and so long until we resume regular meetings in these columns next October. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, South Manchester, Conn. CAROLE A. CLARKE, *Assistant Secretary*, 10 University Avenue, Chatham, N. J.

1923

Pete Pennypacker reports 24 members of the Class turned out for the meeting of the Technology Club of Northern New Jersey, on March 15, at which President Compton spoke. The New York 1923 Club had a party of its own in May, details of which are not available as these notes are written.

I received some interesting photographs of the military operations staged by the Pacific Sector, Canal Zone, U. S. Army, in connection with visits several months ago of President Roosevelt and Secretary of War Dern. Major J. C. Ruddell had the business of arranging these. — A note from Ed Averell, I, mentions that he understands that A. A. Parker, I, was married about a year ago.

O. B. Denison '11 forwarded from Worcester a clipping telling that Mr. and Mrs. Myles Morgan, II, are receiving congratulations on the birth of a daughter on April 16. This is the third daughter and there is one son. — H. B. Golding, II, is plant engineer for the International Equipment Company of Boston, manufacturers of laboratory centrifuges and other specialties.

Eugene V. Ward, IV, has been lecturer in architectural engineering at Stanford University, California, since the beginning of the winter quarter in December, 1932, and gives courses in architectural engineering under the Civil Engineering Department. — C. P. Thayer, VII, is with the Y.M.C.A. at Manchester, Conn.

A. G. Thomas, VI, is Treasurer of the General Research Corporation of Lynchburg, Va. He writes: "I organized this corporation three years ago for the purpose of doing research and development work and taking out patents on a number of ideas. We have not done any manufacturing so far, but place the patents with other manufacturers, usually on a royalty basis."

Roderick B. Jones, VIII, is with the firm of Warfield and Brown of New York, specialists in patent litigation. He reports: "After leaving Technology I received a Ph.D. in Physics from Yale and a LL.B. from Yale. I am a member of the bar of the State of Connecticut and of the State of New York, and am admitted to practice before the United States Patent Office."

Raymond Starr, X-B, says: "This Koch Butchers' Supply Company (North Kansas City, Mo.), of which I am Vice-President, has a misleading name. Our main business is the manufacture of commercial refrigerators. We keep the word 'butchers' supply' because most of our output is sold to butchers. During 1934 I served on the commercial refrigerator code authority, but my term of office has expired and they won't catch me again. I have a three-year-old son, Lawrence."

S. S. Weinbaum, X, is general superintendent of the Albert K. Shelton Company, Cambridge, Mass., manufacturers of paints and allied products. — E. Fletcher Ingals, XV, recently bought a house in Wellesley and moved from Dover. He is general manager of the Natick-Wellesley Airport on the new Worcester turnpike and reports that he is also operating his own corporation, dealing with all kinds of miscellaneous commercial aviation activities.

Ed Miller, XV, is with Miller Crafts, furniture, in Rochester, N. Y., and sends the following amazing report on his family: Anne, 7, Jean, 6, Sally, 5, Eddie, Jr., 4, and Jim, 12 months. They had to build another room on the house! — Thomas L. Powers, XV, is manager of the Hotel Gardner in Fargo, N. D. He reports that a year ago last August he was married to Miss Margaret Dollar of San Francisco.

J. E. Rogers, XV, is Vice-President of Rogers-Majestic Corporation, Ltd., of Toronto, manufacturers of household utilities such as radio sets, refrigerators, and washing machines.

One of the most interesting letters which has come in is the following from Atherton Hastings, VIII, who writes from the U. S. Office of Indian Affairs at Rosebud, S. D.: "I have a daughter, five years of age, who, I expect, will learn the Sioux language shortly. She and Mrs. Hastings live in Valentine, Neb., preferring the relative comforts of a small town to the rugged individualism of living up here in a tent surrounded by bark beetles and Sioux warriors."

"I was graduated from M.I.T. as a physicist, but, after working at the Fixed Nitrogen Research Laboratory in Washington, I felt myself gradually acquiring a taste for chemistry. During the next

1923 Continued

seven years I was connected with the nitrogen-fixation industry, principally in laboratory work on catalyst development and production.

"In February, 1931, I resigned from the duPont Ammonia Company to accept a position in Soviet Russia under the nitrogen trust of that country. There, with my family, I spent a year in Moscow working on plant design. We had a very interesting time and were shown great consideration by the Russian authorities. With their limited resources they did their best to make us all comfortable. We grew very fond of the Russian people with whom we came in contact and many times since we have felt a desire to return.

"During the second year I spent about ten months at a large chemical plant in the Urals, called Berezniki. It is one of the two largest nitrogen-fixation plants in the Soviet Union. I had charge of erecting some of their laboratories and instructing the Russians in the operation of instruments, laboratory procedure, and catalyst testing. I was much impressed with the rapidity with which the young students learned the technique of plant operation. Later on I spent about five months at the other large synthetic-ammonia plant at Bobriki. There I had charge of laboratory erection also. The progress which they made in the intervening year was quite striking. Numerous mistakes were made and great quantities of equipment spoiled, but there was decided progress. Production was on the increase, and operations, while grossly inefficient from our standards, were improving.

"Due to the expiration of my contract, and the desire for a change of diet, we returned to this country. Even during this depression the standard of living seemed remarkably high in contrast to that prevailing in Soviet Russia. For the last six months I have been out here in Rosebud, S. D., in charge of the IECW work. This is a god-forsaken prairie region, barren enough before the drought, but since then one wonders how any mammal, human or otherwise, can eke out an existence. Vast stretches of desert greet one who goes north or east from here, and dust storms which you have doubtless read about, where shifting dirt is piled in drifts over houses and roads.

"We have normally about 150 Indians employed on work devoted to the conservation of natural resources, such as forest protection, roads through the reservation, dam construction for stock watering, and erosion protection. While the Sioux Indian is not noted for being a very energetic worker, the results of his effort are highly valuable in preserving for himself and future generations what few resources the white man has left for him.

"The Indian was originally an Asiatic, and both his customs and language resemble in some respects the types I encountered in Soviet Russia. While sitting in a council meeting and having their statements translated, and observing their eloquence and general facility in carrying out a conference, I am impressed with their similarity to the Russians." —

HORATIO L. BOND, *Secretary*, 195 Elm Street, Braintree, Mass. JAMES A. PENNY-PACKER, *Assistant Secretary*, Room 661, 11 Broadway, New York, N. Y.

1924

Two gatherings of classmates in Boston brought large groups together during the spring. The first was at the Croft Brewery, where Bill Croft played host to about 60 at a dinner, followed by copious quantities of the Croft product and by speeches which kept the group interested until late in the evening. The second was at the Boston City Club in May, when about 30 members of the Class, together with representatives of several other classes, gathered for dinner. President Compton joined the group for the evening and gave an interesting talk on current affairs at the Institute. Genial Professor Armstrong of the Department of Economics was thoroughly enjoyed in his discussion of economic trends. Similar gatherings are planned for the fall and winter months.

Among members of the class who figured in news stories during the past few months was Major Jimmie Doolittle, voted the "best aviator in America," a description which Edwin C. Hill, Hearst Globe-Trotter, says should have been extended to cover the earth. — Professor Harold L. Hazen was voted the Louis Edward Levy medal by the Franklin Institute for two papers on "Servo-Mechanisms." — Dr. Carl F. Muckenhoupt has been made a full professor at Northeastern University, Boston, and will head the Department of Science in the new School of Arts and Sciences. — Newspapers recorded the marriage of Hal duPont on April 17 to Miss Virginia Simmons of St. Louis. — An interesting letter sent to Bill Croft by Henry Simonds indicates that the former's dinner invitation reached Si in Suez during a stop on a round-the-world trip. Si was apparently traveling with the sun, for he reports a pleasant visit with Bill Robinson and his wife and small daughter in Los Angeles, followed by another pleasant stop with Joe Wah Young in Shanghai.

From Professor C. E. Locke Alumni, Secretary, we hear that Don Creveling has recently been made superintendent of the Cyprus Mines Corporation at Nicosia, Cyprus. Our geographic fancy, stirred by the name, led us to discover that this is a British possession in the Mediterranean about equidistant from Turkey, Syria, and Arabia. Don expects to come home for a vacation at the end of the year, bringing with him Mrs. Creveling and their small son. — F. A. BARRETT, *General Secretary*, 50 Oliver Street, Boston, Mass. ELMER W. BRUGMANN, *Assistant Secretary*, Room 2-131, M.I.T., Cambridge, Mass.

1925

COURSES III AND XII

We are indebted to Professor Locke for news concerning the Creveling brothers, Don '24 and Gordon '25. Both are now mine superintendents, Don with the Cyprus Mines Corporation at Skouriotissa, Nicosia, Cyprus, and Gordon with

the Huanchaca de Bolivia Company at Pulacayo, Bolivia. Both of the boys are married and each has a son. When the two youngsters get together, it will probably be necessary to call in an interpreter. The servants in Cyprus speak either Greek or Turkish and those in Pulacayo speak an Indian dialect or Spanish and it is only natural that these children will acquire the native tongues, perhaps using them in preference to English. Gordon reports that at the Bolivian mine they are mining and milling ore running high in silver and carrying in addition some lead and zinc. Some of the production is from the mine, while most of it is from the working of old dumps. The big problem is to find workers because of the shortage of men caused by the war between Bolivia and Paraguay. Because of these conditions many women are working on the dumps and boys and old men are on most of the other jobs.

M. J. Buerger is in line for congratulations on his recent promotion to the rank of Associate Professor of Mineralogy and Petrography. Still another geologist reports, this one in person; Ralph Ilsley, on vacation from his job in Washington, D. C., dropped in to pass the time of day and say that he is enjoying his work.

Gus Marsh paid me a visit a short time ago and informs me that he left the employ of the Hood Rubber Company last fall and is now running a business of his own. He is producing a rubberized canvas glove which sells at a low price and is waterproof. The product is apparently going over quite well. — F. LEROY FOSTER, *Secretary*, Room 6-202, M.I.T., Cambridge, Mass.

1926

The most publicized member of the Class in the month of May was John Drum by virtue of his engagement in Chicago to Miss Isabel Davis. Said the Chicago *Herald and Examiner*: "John Drum, long considered one of the eligible beaux of the town, is the son of Mrs. Hunter Drum of Wilton, Conn. For many years the Drums lived in Chicago — on Bellevue place, with their summer home at Bayhead, N. J., but some ten years ago they moved to Detroit. It was at Bayhead that John's sister, Charlotte, one of the reigning belles of her coming-out year, was married to Carl Shotwell in 1928. A few years after his graduation from M.I.T. (for which he 'prepped' at Taft School), John came back to Chicago, and for some time he has been connected with the firm of R. R. Donnelley. He is a member of the Saddle and Cycle Club and keeps bachelor hall at 33 East Elm Street." Miss Davis is the daughter of the President of the Borg-Warner Company and a former student of Vassar and the University of Chicago.

The Boston *Transcript* on April 20 announced the engagement of Rufus L. Briggs to Miss Sylvia Grace Larsson of Hyde Park (Boston). — The New York *Times* of April 22 announced the engagement of Miss Mary Gertrude Kelley of Passaic, N. J., and Charles P. McHugh.

1926 Continued

McHugh is a chemical engineer with the Manhattan division of Raybestos-Manhattan, Inc.

George A. Makaroff writes from New York that he is lending his talents to Metrotone News and Universal Newsreel. He reports that no less a body than the United States Congress has finally legalized his existence in this country, after nine hectic years spent under the aegis of the League of Nations. His address is 19 East 129th Street, New York.

The Secretary regrets to record the death of Deane M. Parrish, II, of Richmond, Va., on August 17, 1933. This death was not reported to the Institute until May of this year.

Melvin C. Dow is with the N. Y. Trap Rock Corporation in Newburgh, N. Y. — A. Howard Lane has moved from New Haven to the American Tel. and Tel. in New York City, 32 Sixth Avenue. — Henry C. Rickard is now with the United Shoe Machinery Corporation, Foreign Department, 140 Federal Street, Boston. — Cesar E. Arteaga lives at 8 de Octubre 2856, Montevideo, Uruguay. — Mahadeva L. Schroff is now a Professor at Benares Hindu University, Benares, India. Captain William B. Mayer, U. S. Army Air Corps, has gone to France Field, Canal Zone, and John E. Deignan has moved from Madden Dam to P. O. Box 145, Balboa, Canal Zone. — Other changes of interest: Walter E. Campbell, Hogg and Campbell, 45 Newbury Street, Boston; Edmund F. Oeffinger, E. I. du Pont de Nemours and Company, 3500 Grays Ferry Road, Philadelphia; Adon N. Smith, 2nd, Northwestern Mutual Life Insurance Company, 141 Brevard Court, Charlotte, N. C.; Edwin E. Spitzer, R. C. A. Radio-tron Company, 415 South 5th Street, Harrison, N. J.; George S. Killam, Edison Electric Illuminating Company, 1165 Massachusetts Avenue, Boston; I. Austin Kelly, 3rd, Blind Brook Lodge, Rye, N. Y.; Alton S. Heyser, Technology Club of New York, 22 East 38th Street; Edna A. Gerken, Republican City, Neb.; Edward N. Dingley, Jr., Bureau of Engineering, Navy Building, Washington, D. C.; James W. Dunham, National Cylinder Gas Company, 205 West Wacker Drive, Chicago; T. Hooker Barry, N. E. Tel. and Tel., 245 State Street, Room 112, Boston. — J. RHYNE KILLIAN, JR., *General Secretary*, Room 11-203, M.I.T., Cambridge, Mass.

1927

W. H. Reed — Bill or Hal to you — was married on December 19, 1934, to Miss Pauline M. Shaffor, daughter of Mrs. A. D. Black of Salisbury, Pa. Bill sent this information after your Assistant Secretary, having heard the rumor, wrote to get the facts from his old Pittsburgh roommate. The Bill Reeds are living at the Fairfax, Fifth Avenue, Pittsburgh. Bill is still in the sales department of the Koppers Products Company, where he specializes in coal-tar road materials.

Lee Miller has written that he is anxious to get word from Course I and XI men so that he may continue his course column in *The Review*. His address is 114 Morningside Drive, Elmira, N. Y.

Dice Coburn has written to tell us that he was in New England last summer and saw P. C. Eaton in Maine. At the same time, Don Miller, who is living in Hartford and teaching Physics at Trinity College, arrived to make an impromptu class reunion. Dice saw Dick Hawkins in Chicago while Dick was on his way from Boston to Minneapolis, the home office of the Minneapolis Honeywell Regulator Company. Dice reports that the steel business has been pretty good for the last few months. He is connected with the Wisconsin Steel Company in Chicago, and is living at 7317 East End Avenue, Chicago, Ill. He saw Ernie du Pont in Chicago where Ernie was carrying on his duties as manager of the Cast Iron Products Division of the National Radiator Corporation, Johnstown, Pa.

Dike and Eloise Arnold have been presented with a son, Richard Cobb Arnold. The young man arrived on April 12. This brings Dike's family to two boys, Douglas 1½ years old, and Richard.

On a recent trip to New York your Assistant Secretary ran into Deke Crandell on 42nd Street. The meeting could not have been made a week later as Deke had just signed up as consulting engineer for a caisson job and was leaving immediately for Kansas City. Deke's bay window still keeps him in the alderman class.

Your Assistant Secretary will welcome more letters, as he has said many times before. Perhaps now that the ball has been started rolling by Dice Coburn, Bill Reed, and Lee Miller, some of the other fellows will crash through. — JOHN D. CRAWFORD, *General Secretary*, General Radio Company, 30 State Street, Cambridge, Mass. RAYMOND F. HIBBERT, *Assistant Secretary*, The Gill Corporation, 238 Main Street, Cambridge, Mass.

1928

Last month two classmates broke into print in a big way in the Boston newspapers. The first article described the new porcupine-like center for a golf ball invented by George Muir, Jr. The Boston *Herald* devoted the most important part of one of their sporting pages to this latest wrinkle in the development of golf balls.

George is apparently quite a devotee of the game, being a member of the Charles River Country Club. He became convinced that the present golf balls were improperly designed and that their centers became distorted upon impact to such an extent that they tended to make the flight or roll of the ball inaccurate. He developed a golf-ball center of resilient material with projecting prongs to distribute the force of impact properly. Here is his own description as reported in the news: "There is nothing more disconcerting," declared Muir yesterday while discussing his new idea, "than to watch a well directed putt slide away from the hole because a distorted liquid center has made the ball lopsided."

"Solid-center balls have been more or less replaced by liquid-center balls in recent years, on the theory that the liquid

cores produce more distance and so absorb the shock of the impact from the club that the covers do not cut so easily. — True, the liquid center does help prevent the ball from being cut easily, but it gives so much at the moment of impact from the club that it soon becomes distorted and, of course, when the center becomes lopsided, the entire ball loses its balance.

"When I first became interested in this proposition of golf-ball construction, I cut open about 12 dozen balls and examined the cores. I became convinced that only those with solid centers were mechanically correct and any ball revolving around such distorted centers as I discovered could not produce satisfactory results.

"I came to the conclusion that the ideal center for a golf ball would have to meet the following specifications: (1) The core must be solid and counterbalanced perfectly, compensating in every revolution in every direction. (2) There should be no centrifugal force set up on the ball due to any false center of gravity. (3) There should be no bulge or hump or any departure from a true center in the core of the ball. (4) There should be a counterbalancing process much the same as that in which the crank shaft of an automobile is counterbalanced by weights. Only when these specifications are met will a golf ball be mechanically perfect.

"Those who argue against a solid-center ball in favor of the liquid center will tell you that a ball with a solid center will not flatten out enough at the moment of impact to provide the necessary distance.

"This is not so. In the core which I have developed, the material used is resilient in the proper degree. At the moment of impact, the liquid-center ball flattens greatly — a distortion which does not remedy itself completely during the active life of the ball. This flattening of the center creates a large vacuum or air pocket behind the ball which has a negative reaction in the length of the drive. — A solid, counterbalanced core with prongs projecting from the center permits a pronounced flattening out at impact, but these prongs also act as an agent to pull the ball back into its proper shape. This greatly reduces the chances for permanent distortion of the core. The large vacuum behind the ball is reduced almost entirely and the ball thus travels through the air unhampered by any false center of gravity, and aided by the reduced resistance to the air it displaces."

The second '28 feature involves the Paris guns and our own Harry Hardsog. This article was carried in the Boston *Sunday Herald*, and was so interesting that your Secretary visited the Main Library and read the book by Colonel W. T. Miller on the "Paris Guns." Here are some selected paragraphs from the article which contained Harry's picture and which was written by Howard Fowler of the *Herald* staff: "The imperial German army squandered millions of dollars in 1917 and 1918 for artillery

1928 Continued

to throw Paris into frenzied panic 75 miles away, in the greatest bombardment modern warfare has ever known.

"From Dr. von Eberhardt's first notion that long-range guns could be built to shell the heart of France until the last of the 264-pound projectiles splashed its terror in Paris, this amazing World War episode involved the most intricate scientific data and mathematics of the highest order.

"Concerning these factors, volumes have been compiled by military investigators. But to satisfy his own insatiable thirst for a commonplace understanding of the big Berthas, as they were called, Harry Hardsog, a Technology graduate, power engineer of Attleboro, allowed his scientific mind to pore over the vast fund of technical information. In the past three years, more than 100 audiences have heard him relate an intriguing tale as a result of this interest.

"To the voluminous story, 'The Paris Guns,' written by Colonel W. T. Miller of the United States army ordnance, Mr. Hardsog is indebted for many of the facts which are the basis of his explanations.

"First, it was the great contrast between the artillery we use in the anti-aircraft of the coast artillery and the big German rifles that aroused my interest, Mr. Hardsog said in his interview with the *Sunday Herald*.

"As I dug deeper into the data at hand, the higher mathematics of the ballistics caught my attention, so I stuck to my guns for several weeks until I had pieced together a tangible story which I thought would interest laymen," he continued. — And it isn't as though this native son of Indiana cannot make an impressive appearance at service-club luncheons and the like, for he included in his Technology career all the public-speaking courses offered. He was graduated from M.I.T. in 1928 and was granted his master's degree in the field of science in 1929.

"A résumé of the war weapons of all history gives you a more impressive picture of the weapons that astounded an already awe-stricken world, and proved that nothing was impossible," Mr. Hardsog explained."

Apologies to Chuck Sampson for this belated announcement but here it is: Born on November 28, 1934, Sigrid Ann Sampson. Our heartiest congratulations to the Mr. and Mrs. Chuck included the following note in his last letter: "We had a very good meeting a few months ago and are now trying (with success, I hope) to reorganize the Tech Club of Toronto. There are about 30 men around here so we should have a fairly good turnout at the meetings. I am still an electrical engineer on building appliances and am making trips on weekends between Toronto and Rochester to keep in touch with the plant in the U. S."

We have the pleasure to record the engagement of Dean Batchelder to Miss Ellen Chase, daughter of Mr. and Mrs. Charles A. Chase of Scituate. The en-

gagement was announced in Pasadena late in April and the wedding will occur this autumn.

Congratulations to Mr. and Mrs. Carl Wilson Harris on the happy event of their recent (May 4) marriage. Mrs. Harris was formerly Miss Caroline Keene of Hingham. The couple are now living at their farm in Halifax County, Va.

Recent announcements in The Review have told you about the signal honor bestowed upon our President, and fellow classmate, Ralph Jope, who has succeeded the late Dr. Allan Winter Rowe '01 as Secretary of the Advisory Council on Athletics. Ralph has tackled this Herculean task with a zeal which we can attest from close personal observation. It seems as though he were averaging about 14 meetings every seven days. In between times, Ralph is painting his house — and, gentlemen, if you want to see a sight for sore eyes, you should see our sylph-like friend perched atop a 20-foot ladder painting around window sashes in the spring breezes. Ah me, who would have thought that the mantle of domesticity would have fallen around his thin, sensitive frame so easily! — GEORGE I. CHATFIELD, *General Secretary*, 5 Alben Street, Winchester, Mass.

1929

Another anniversary of our graduation from the Institute has passed and with its observance, the natural interest in our classmates and their activities manifests itself. From the occasional comments I insert in The Review, if you read our notes, you have possibly more of a picture of what my life is than any of us have about you. I know you are moving around the country from the changes of address that are sent to me through the Alumni Association. However, the facts disclosed on those slips do nothing more than place you on the map. Let's break out of our shells and satisfy the questions that are in the minds of all the gang you knew back in Boston and to whom you have not written in six long years.

If you write once, you do not need to feel bound to continue to produce material for these columns, though we would sincerely welcome such a correspondence. We hope that sooner or later you will get around to writing that once and, having enjoyed the satisfaction of that effort, you will come again.

I am getting around the country a little more than in the past, for my present job is to function as a member of what Good-year and the rubber business in general call the manufacturer's contact department. My time is more or less divided between Detroit and Akron and when I am in Detroit my job is to contact with the various car manufacturers on engineering problems relating to tires.

Some of you who may be located in the Detroit area or pass through there occasionally might get in touch with me at the Book-Cadillac Hotel, for I am there every other week or so, and we could have a fine get-together.

It is with deep sorrow and sympathy for his wife and parents, that the passing of Benjamin Proctor, 3rd, of Wellesley, is reported. He was killed in an automobile crash in Fort Lee, N. J., while driving to Wellesley.

Cub Clark, XV₂, wrote a fine letter telling about the activities of classmates around New York. His letter follows: "It has been some time since I last wrote you about some of the boys in 1929 who are in this vicinity. Within the past few months we have been doing things here. At the class dinners held about every six weeks at the Tech Club of New York, we have instituted a series of two or three short talks given by various members on chosen subjects in their fields. This provides an extremely interesting dinner meeting and one which is more constructive than the general run of such meetings.

"It is hoped that we can stimulate enough interest to tear some of the delinquents from their places of hibernation. If this can be done, we should have a very active group here in New York. We particularly want to get notice of this new venture into The Review as an added help.

"The regulars at the meeting include the following: Al Eigenbrot, Ken Horgan, Sonny Pforzheimer, Roger Sykes, Frank Pierson, Carlton Wood, Art Marsh, Newton Bryant, Jerry O'Connor, and the writer. A few others have also been seen: Schormann, Ted Ewald, Moses Brimberg. If anyone wants to get in touch with these boys, I can easily arrange it. — If possible, we should like to squeeze this into the May Review. Please see what you can do."

Cub's address is 140-18 Ash Avenue, Flushing, N. Y., and if any of you like his plan of organization and think it would be interesting to start similar activities elsewhere, or would like to join the New York gang, write him for the details. It's a great plan. Note that Cub's request to have his notice of the class activities in New York included in the May Review could not be satisfied, for information for The Review must be in the hands of the Editors by the 24th of the second month preceding the date of the issue; i.e., that for inclusion in May must be in their hands by the 24th of March. Since there is no June issue, it has had to wait until now, but it is just as interesting. We wish your activities all the success in the world and hope that other groups in large cities will take up the idea.

Bill Hutchinson, Jr., III, mining engineer extraordinary, as reported by his wife, is now looking for gold (and who isn't) in the Virginia Mountains. It seems to me that he had already acquired something mighty close to gold in value long before he hit Virginia, for a wife who enjoys writing a husband's letters and has as much of a sense of humor as Mrs. Hutchinson appears to have is practically priceless. Her very much appreciated and interesting letter follows: "A year having almost elapsed since 'our' last communication to you for The Review, it seems

1929 Continued

fitting that the still 'lesser half' inform you that our aspirations and hopes to enter the metal field 'in the near future' were realized even sooner than we had fully anticipated. In fact, at the time the March, 1934, edition was sent out, we suddenly and happily were given the opportunity to hunt for gold (not coal) in the State of Virginia.

"Hence, Bill Hutchinson, Jr. (III) — my better half — is now Superintendent of the U. S. Mine just 12 miles from Fredericksburg, Va., representing North American Mines, Inc., of Boston. Needless to say, we are delighted to be wiping off (?) gold dust rather than coal dust, trite as it may sound, and we are thoroughly enjoying this old historical town of Fredericksburg. Our house overlooks the Mary Washington monument, only 50 yards away. We have located Ed Hawkins '30 in Richmond, where he is representing Stone and Webster in the Virginia Electric and Power Company office. Ed has spent several week-ends with us here.

"The young son, Bill, 3rd, now a year-and-a-half old, occupies all of our spare moments, his energy being unbounded; also two dogs add to the general harmony. Your plea for more news prompts this letter of confirmation of our hopes for the metal field, and who could ask for much more than gold? 'Let us pray' — I'd make an excellent press-agent, don't you think? Bids are open. With best wishes for similar prompt responses to your column! — Kay (and Bill) Hutchinson, 1403 Washington Avenue, Fredericksburg, Va."

Let us finish the column right now with the wish that more of the wives of our classmates would so assist their weary, hard-working husbands. — EARL W. GLEN, *General Secretary*, 1302 Delia Avenue, Akron, Ohio.

COURSE VI-A

The Boston group had dinner together at the University Club on December 19. Those present were St. George Arnold, Norman Earle, Ed Gardner, George McKenna, George Meyers, and the guest speaker, Charles R. Boggs '05, Vice-President of the Simplex Wire and Cable Company. The only absentee was Joe Green, who disappeared after the 1934 reunion and has not been seen or heard from since.

Norman Earle gave a talk on the Van de Graaff generator, illustrated with slides showing pictures of the original model and views of the large size unit now in operation at Round Hill. Following this, Mr. Boggs lectured on "Why Tech Men Stop and Go." He covered applying for a job, how to work while holding a job, and the effect of present and future conditions on the men who were graduated in 1930. Mr. Boggs had recently been to a meeting at M.I.T. on the same subject, so that his talk covered opinions set forth by Westinghouse, General Electric, and the Detroit Edison Company, as well as ideas gained from his own experience at the Simplex Wire and Cable Company.

Members of the Class will be sorry to hear that Norman Earle's father died in March after a month's illness. — GEORGE J. MEYERS, JR., *Secretary*, 13 Park Street, West Lynn, Mass.

1930

COURSE VI-A

I know everyone will be pleased to hear of the arrival of Patricia Anne Bowley last March at the home of Mr. and Mrs. R. J. Bowley in Philadelphia. — More news came from that part of the country, making it possible for me to take great pleasure in announcing the marriage of William Hane Wannamaker to Nancy Cross in Merchantville, N. J., April 6. Wanny and his bride are now at home at Ridley Manor, Ridley Park, Pa.

I understand from the astute observer, Steve Prendergast, that Bub Wilson has been married for some time. Further particulars are thus far lacking. The three married men referred to above are the three men concerning whom I ventured to make a prophecy last May. Ray Bowley was married before my words of wisdom were printed and apparently Bub Wilson was married in 1934. It remained for Wanny to prevent me from having a perfect score. I should have said that they would be married within a year. I shall, hereafter.

May you all have happy vacations this summer. — E. E. FERGUSON, *Secretary*, 321 Park Avenue, East Orange, N. J.

1931

Sufficient information of general or special interest to the Class has come to hand since the last '31 notes to justify its inclusion in this issue of The Review. I have, first, the pleasant task of reporting marriages and engagements. Robert Small Backus was married to Jane Smith on the 28th of March at Nantucket, Mass. Robert John McMinn was married to Helen Elsie Toennies in February in Bloomfield, N. J. Robert McKenzie and Jeannetta Frances Sullivan were married, also in February.

Lieutenant William Dean Harrison and Margaret Martin Mosely have been married recently. Since graduation from the Institute, Harrison has spent some time in the United States Flying School in San Antonio. The couple will make their home at Langley Field, Va.

Wyman Pender Boynton was married to Mildred Elizabeth Bullard in February. August Henry Schutte and Frances B. Westerberg were married in March. Schutte is with the M. W. Kellogg Company's research laboratories in Bayonne. Standish Deake and Genevieve M. Grover were married in February at Springfield. They will make their home at 21 Sutherland Road, Brookline.

Then there are two engagement notices to be included, that of C. Randolph Binner to Hope Elliott Chase of Ocean-side, L. I., and that of Frank J. Jameson to Flovia Smith of Berlin, N. H. To all of these couples we extend the congratulations of the Class.

We have received the following letter from Edward Abbott: "This is to register serious objection to the statement which appeared in the March issue of The Review in the second paragraph of the class notes for the Class of 1931, referring to one Edward Abbott. The statement contained therein is false, misleading, erroneous and has caused me not only considerable embarrassment, but has materially handicapped my efforts as far as social activities are concerned. While I appreciate that the editors of The Review cannot assume responsibility for statements inserted therein by correspondents, I am most emphatic in expressing my belief that before publishing definite statements regarding a person's marital status, confirmation should be obtained, possibly from Walter Winchell. In other words, I regret (?) to inform you that I am as yet unmarried."

I am sorry that the erroneous statement in the March class notes should have caused such inconvenience. It is rather difficult to maintain a state of equilibrium between the continual demand for news of the members of the Class, on the one hand, and such a demand for accuracy. I am, of course, limited in my sources of information to an occasional letter and an occasional conversation with some member of the Class; but if class notes are to exist, I must make use of the latter as well as the former source. In the future, I shall include only accounts, written in his own hand, and properly witnessed by a notary, concerning Mr. Abbott.

Louis Evans writes as follows: "For the past three years, I have been connected with the Texas Company, in the research laboratory here in Beacon. In the capacity of Chemical Engineer, I have indulged in varied research problems relating to petroleum refining, from motor oils to gasoline (Fire Chief). I entered this field shortly after leaving the Bigelow-Sanford Carpet Company, with whom I was connected for a short period after graduation. Ed Comings, who got his Doctor's degree at M.I.T. last year, is also with us at present — in fact, we're in the same department. . . . I have not done much rowing since the good 'ole' days when we paddled on the Charles under the genial Haines, except for an occasional ten miles (well, 100 strokes) on a dinky little rowing machine which emerges from its nook about once every eclipse. And I may add that marriage is still the great mystery to me, although the following year may find things a little different.

"As for information concerning my classmates, I doubt if I can add anything to what you already know. John Arnold is researching for the M. W. Kellogg Company at Jersey City, N. J. He, too, is messing around with oil and gasoline; while Hy Davis has been batting for Foster-Wheeler Corporation at Cartaret, N. J., since annexing his Doctor's degree last year."

Fred Elser's contribution follows: "The following is occasioned by the dearth of Course VI and even of any other class notes in recent issues of The Review.

Perhaps other '31 men will also cease their unending money grubbing for a few moments and let us know what happened to them.

"As for myself, after leaving the Institute and driving out to California, I spent some months in graduate work at Stanford, leaving to be married to Miss Margaret Mitchell in February, 1932. Since that time, we have made two trips out to the Philippines on business, continuing on around the world at the completion of the first trip. On May 8, 1934, Janet Elser was born and has kept her parents very busy ever since.

"The demand for communication engineers being negligible these days, I have taken this means of cheating the depression, with unexpectedly good results. This seaside community is noted for its mineral springs, resort hotels, private estates, state park, actinic rays, and other Californian attractions described in the better Chamber of Commerce publications.

"Sorry I couldn't come to the reunion, but I had to stay here and earn a living. By the way, to any that are feeling affluent enough to take a few weeks off this summer, I want to recommend the California Pacific International Exposition, held down here at San Diego this summer. Have had a number of 'previews' of it already and it is really going to be good. Drop in on me if you come. At any rate, let's have some class notes in *The Review*."

Peter Loewe has written in a good letter, an example of the sort of thing which is appreciated by myself in particular, and certainly by all those who see the class notes: "... I thought I'd chip in and start the ball rolling with some class news. After all, the Secretary can't put in what he doesn't know, and maybe somebody else will crash through with some gossip too. ... Every once in a while I hear from Paul Kimberlin who is still with Youngstown Sheet and Tube. His address is McDonald, Ohio. As far as I know, he is still unattached; what sales resistance that boy must have! Bob Lytle is still in Clairton and seems to be doing very well; a little bird has been whispering through the keyhole that he has some serious intentions for this coming summer. Page Walter Winchell. — Stu Westerfeld is helping his father run his business in Chicago. I expected to look him up the last time I was down there, but I got so tangled up in other things that I didn't get around to it. He can be reached at 365 Elder Lane, Winnetka, Ill. — Gene Macoy who roomed with me for some time in Holman is living now at 3424 Brookline Avenue, Cincinnati, Ohio. He has been married for several years, and is still with the American Can Company as research physicist. The last thing I knew he expected to be transferred to the New York office. For all I know, he may be there now, since I haven't heard from him since October, '34. ...

"I had a few letters from Julio Gallese, whose address is Casilla 317, Lima, Peru, S. A., in which he painted the advantages of his home country in glowing colors

and asked me to come down. I haven't gone yet, and Lord knows whether I ever will; I rather got my fill of South America before I ever came to Tech. Just what he is doing, I don't know. Incidentally, I just see that my last news from him is nearly a year old; hence if you have something newer, ignore this. — At about that same time, I got a letter from Irv Finberg, who, at that time, disgusted with pumping gas and changing oil, had gone to Harvard to take up law. Of course, there hasn't been any building construction going on for so these many years; naturally he found it impossible to find anything along his line.

"And that's about all I know about the boys. As far as myself is concerned, I've been married for over a year now and am getting nicely housebroken. I was first for a year with the Olds Motor Works as engine designer and then for another year in the same capacity with the Chrysler Corporation. In both cases the depression layoffs caught me, and then, a year-and-a-half ago, I joined a Philadelphia outfit as their Michigan resident engineer. My present work entails an astonishing amount of driving, and I am wearing out my cars at the rate of one a year. Since I'm still on a depression salary, I am keeping my eyes peeled for something else.

"Now I hope that you'll have some more news in the next issue, especially from Bud Noyes *et al.* By the way, I've had a nice visit with Al Kullman '25 who is now research engineer with the Power Transmission Council, New York. — Lee Karel '30 was, at last accounts, in Southern Illinois with some power company. Roy Haeusler comes to see me often; he's here in Detroit doing FERA work along vocational-guidance lines. Norm Paquette was just canned by Chrysler, as was Gene Lourie, who is now with Electric Auto-Lite in Toledo."

A pleasant summer to you all. — JAMES B. FISK, *General Secretary*, Room 6-306 A, M.I.T., Cambridge, Mass.

1933

A lot has happened since the last writing of this column. Yours truly enjoyed a month's vacation in Florida which he heartily recommends. On the way home I stopped in at Baltimore to see Emmie Norris and Bill Weed who are at the Davison Chemical Company plant there. From there we also hear of Bill Weed's wedding on May 25 to Miss Virginia Potter. Congratulations, Bill! Norris has more to say in his own write-up. Then stopping at Reading to see George Garcelon and Otto Putnam at the Alt-house Chemical Company. George is research director there and Otto is plant superintendent. Keep up the good work, boys.

And some first-, second-, and third-hand information I have picked up (if you wish details drop me a line): Lou Person '34 is with the United Mutual Fire Insurance Company in Boston as an examiner in the Underwriting Department. Gordon Danforth and Phil Walker are also with this company. Bob Henry,

when last heard from, was expecting to start with the New York Shipbuilding Company at Camden, N. J. Ed Wemple is living in Bridgeport, Conn., and working for Remington Arms Company doing all sorts of industrial engineering work. A portion of a letter I received from Bernard F. Doucette, Society of Jesuits, at Manila, reads as follows:

"I am the weather man for the Philippine Islands. Perhaps you may remember newspaper reports last fall concerning typhoons in the Philippines and reports given to the public by the Manila Observatory concerning these typhoons (the same phenomena as the hurricane of the West Indies). I had my part to do in making out these reports. At the Institute, I studied under Dr. Rossby, Dr. Willett, and Dr. Lange, who are in charge of the course in meteorology, given to graduate students. It is classified under Course XVI."

A portion of a letter from Ivan Getting tells of some of his work at Oxford: "I had a little paper in the 'Monthly Notices' of the Royal Astronomical Society of last December. I've also been working on a small problem in Cosmic Rays with Professor A. H. Compton, who is here as the Eastman Professor."

I was also glad to hear from Lance Bowen and here's a portion of what he had to say: "Here is a thumb-nail sketch of my career since June, 1933. Loafed that summer, worked a couple of weeks the latter part of September in the cashier's office at Tech, and stumbled on a job with the National Association of Wool Manufacturers in Boston. Mr. Humphreys, the Secretary of the Tech Corporation and a former professor at Tech, was my boss so I kept more or less in with affairs there. Last month I received a call to report for duty at the Lawrence Manufacturing Company here in Lowell, completing negotiations started nearly two years ago and which had lapsed in the meantime. It is in the cost department of a large textile mill turning out knit underwear and specialty products. It is a progressive concern and faces a better future than the majority of the New England textile mills. The work consists mainly of cost figuring and time-study work."

Warren Henderson again helps me out with a letter and here is what he has to say: "Bill Harper was in Cleveland, during the fall, and spent a few days with us while cleaning up some business affairs. He told us all about the European trip with the Business Administration crowd. It seems that Jim Vicary was also a member of the party. — The friends of Winslow V. Fitch '31 may be interested to know that I hear from him quite regularly. He is connected with the research staff of 'Columbia Pictures' in Hollywood. His address is 1914 Taft Avenue, Hollywood, Calif.

"We have an alumni unit here in Cleveland, although you would never know it by Review notices. (Publish that, if you dare.) We have had several interesting meetings, at one of which we

1933 Continued

heard Charlie Smith '00, our Alumni Association President. He gave a very interesting and entertaining talk. Incidentally, he, a railroad man, competed on the program with a speaker from one of the air lines, and he held his end up perfectly.

"I expect to drive over to Pittsburgh a little later on to see Frank Amadon, who is masquerading as a chemical engineer. Course II surely makes the boys versatile."

Edmund B. Norman, Jr. is in Fayetteville, N. C., in the sales and service departments of a house-furnishing General Electric Home Appliances. — Edward Malkin is in the motor-freight business in Cambridge. — Here is a portion of a letter from John Quinn '34: "I was fortunate enough to land with the Pennsylvania Railroad in July. I am working as a special apprentice and in three years' time am expected to acquire a general working knowledge of the railroad insofar as it pertains to maintenance of equipment."

Carl Ekwall is with the Brake Lining Manufacturers Association here in New York. — W. W. Newton is in Dallas, Texas, in charge of a seismograph survey party for Geophysical Service, Inc. I have also heard from another of our chemical engineers who is down in Porto Rico — Shirley Carter, who has a very fine position with the Arecibo Distilling Company in charge of plant control. He has also built some experimental equipment for them. Previous to this, he worked in Minneapolis, then did some mining in Colorado. We sure jump around — Boston to Minneapolis to Colorado to Porto Rico.

John Longley dropped me a line which just arrived in time to be inserted; here's what he's doing: "I have been transferred to Ithaca, and am now doing installation work for the Telephone Company. How long that will last I cannot say, but the next step is to work inside on the dial equipment for a while — and that I am not looking forward to doing at all, but it is necessary, if I want to learn the business. I have been outside all the time, till I came to Ithaca, six weeks ago, and even here in Ithaca, the work means being outside 50% of the time, so that when I have to get into a not-so-well ventilated apparatus room, I am going to feel very cramped."

Thanks for all these letters; it sure helps keep this column going. I'll try to answer you all — send lots more of them.

And here's a few lines from the fellows who were at our last New York dinner in May: Bill Moore is with the Pan American Oil Company here in New York. — Bill Ruth is still with Dun and Bradstreet and was married in the middle of June. Congratulations from all of us. — Dave Ingalls is with Treflex Metal Hose doing development testing and superintending work. — Fred Roetting is with R.C.A. Victor doing test and maintenance work. — Sibley is in Boston on his own, installing public address systems. — Regan is with Cities Service in Braintree. — Bob Ripin is contemplating leaving

for England where he is to work as a plant manager. — Doug Stewart has signed up with Remington Rand. — Petitmermet is with Price Waterhouse. — MacDuff and Snell have completed their air course at Randolph Field and have received their commissions. — Frank Sullivan is in the Crisco plant of Lever Brothers. — Ed Lockman is with U. S. Rubber in the Mechanical Goods Division. — Kirk Miles is with the Government at Pickwick Dam in Mississippi. — Marshall Wieder is in business for himself making special tubes and doing testing work. — Sam Lambert '32 is with Shell Oil at Tulsa, Okla., and is married. — Bill Gray took the Big Step on June 1 and is still with R.C.A. — Bill Allen was married in the middle of June. — Paul Netherwood is working in his home town, North Adams. — Leonard Shapiro is with Keufer and Esser in Jersey. — Frank Becil is with a radio company in East Orange. And that's my story for this time. — GEORGE HENNING, JR., *General Secretary*, 163 Barbey Street, Brooklyn, N. Y. — ROBERT M. KIMBALL, *Assistant Secretary*, Room 3-210, M.I.T., Cambridge, Mass.

COURSES III AND XII

It has been a long time since much news of us miners, geologists, and metallurgists has been published in *The Review*, chiefly due to inertia on my part and the part of some of the gang. It is hard to believe they are working such long hours they don't have time to write. Therefore, it seems that they must be too busy getting married. You know there are several who have finally succumbed to the mating instinct. Along with Doug Penning and Dan Murphy has gone Allan Vaughan. Success and happiness to you, Allan! He writes that after graduation, he got a job with a dealer in industrial diamonds. However, in January, 1934, he took a job with the United States Smelting, Refining, and Mining Company. At the present time, he is at their laboratories in Cambridge right beside the Graduate House. His work involves fire assaying, wet analyses, and various research problems. Now that he is married, his address is 329 Pearl Street, Cambridge, Mass.

Preben Oldenburg has written an extremely interesting description of his activities during the past year or so. For some time he was established in the town of Wink, Texas, working for the Shell Petroleum Corporation. While located there, he was known as engineer trainee, having work varying from laboring to assisting the petroleum engineer. From all I ever read, working around an oil well is no job to be envied. It must be about as dirty as you could wish, and, with a nice, hot Texas sun beating down on you, the chances are you will either get pretty tough or else quit. We will just assume Preben is getting tough, for, after laying pipe lines and operating oil wells at Wink, he was transferred to the Gulf Coast in Louisiana. There Shell is doing extensive drilling and exploration. At the present time, he is in East Texas

at Kilgore. In that area, there are no less than 17,000 wells, constituting the world's most extensive oil field. Although the field is four years old, an average of 70 wells are being completed each week. Now that he has obtained a good working knowledge of drilling, he has a more responsible job as junior engineer, looking after the engineering work.

Last Christmas I dropped in at Technology while in Boston and had a chat with Morris Cohen. Part of the time he works as an instructor, imparting his knowledge to the metallography classes. The rest of his time is spent working for Professor Norton and studying for his Doctor's degree.

I have no more news about other members of the gang, but, in my wanderings about Baltimore, I have bumped into several Technology fellows. Not long ago I met Wendell Allen and Winslow Hartford at the Mount Vernon Church in this city. Being very active in young people's affairs there, they are President and Vice-President, respectively, of the Epworth League. Wendell Allen is in the signal department of the Pennsylvania Railroad, and Winslow Hartford is the whole research department of the Mutual Chemical Company. He took his minor in metallurgy a year ago, and did a great deal of work in the Fire Metallurgy Lab.

As for me, at Christmas I deserted Bethlehem Steel and took a job with the Davison Chemical Company, where I am applying my training to corrosion problems, roasting, leaching, and sintering. At the same time I went with Davison, Bill Weed, XV, also got a job there. He is now assistant to the superintendent of the phosphate plant. Just the other day the Baltimore *Evening Sun* published the announcement of Bill's engagement to Miss Virginia Potter. At the time this goes to press, they will have been married, the date of the wedding being May 25, at the St. David's Protestant Episcopal Church in Baltimore.

And this, gentlemen, completes the news for this year. Between now and next fall there should happen plenty of things to write about. So, let's try to make Courses III and XII more in evidence by having more frequent articles in *The Review* next year. — EMERSON S. NORRIS, *Secretary*, Davison Chemical Company, Baltimore, Md.

1934

I heard an interesting story at the last class dinner at the Technology Club of New York, which was held along toward the end of March. Because this will see print for the first time in July, it must sound stale, though I still believe it should have a place in this column. To get to the story, you will remember some time back I reported that Carl Wilson, Cash Belden, and Herb McKeague all have jobs with the American Optical Company in Hartford. So much for that, but the hows and wherefores connected therewith make a different story.

Carl came into his job legitimately enough, what with the usual letters and

1934 Continued

interview. After he had settled down to his work, he wrote encouraging letters to Cash, saying that jobs could be had for the trying, whereupon Herb was called in to drive Cash up to Southbridge from New York, because Herb had a car but no job, and, needless to say, time on his hands. Well, Carl must have recommended Cash to his employers, because it developed that Cash was hired almost immediately. (Curtain to show lapse of time.)

Two months later Herb was still peeking around corners for something that would earn him his daily bread, when suddenly he hit upon the idea of trying at the American Optical Company, which idea he carried out to the point of being ushered into the office of the Assistant Personnel Director. This is not supposed to be a guessing game, so we shall tell you without further delay that said A.P.D. was none other than one Cassius Clark Belden, or plain Cash to you.

The story has no moral, but I have it on good authority that Cash put Herb to work as Carl's assistant.

Now, to get away from fairy stories, I have been given the privilege of announcing to our Class the marriage of Miss Lois Evelyn Hawes to our own Rev. Williams, or, in a bit more formal way, to Mr. Roger Hargreaves Williams. The ceremony took place on Saturday, March 30, at Brockton, Mass. The couple will be away on their honeymoon for almost a full month, after which time, May 1, to be exact, they will make their home on Shore Road, at Monument Beach, Mass. Better late than never, so let me take this opportunity to offer my sincerest congratulations and wishes for happiness, and that goes for the rest of the Class.

To get back to the class dinner (remember I started with that), we had a batch of strange faces with us, fellows who attended for the first time. Among them were Marvy Silberman, Harry Eagan, Hal Thayer, Walt Wrigley, Johnny Hord, Don Harman, Pete Carlafes, Al Rogowski, Bill Buttmi, Bill Main, and Len Shapiro.

Al Rogowski had been in town for a week or two, trying to make connections with the TVA (Tennessee Valley Authority). Johnny Hord is with the Spowers Research Laboratories, galvanizing consultants. Marvy Silberman displayed all the earmarks of having recently become a father; don't misquote me, I only mean he brought along a box of cigars, which stogies were distributed among the fellows, *à la* banquets at Tech. Charlie Finnigan is now with the Amp-Lion Company. Some of the boys in the "know" gave me some information about Johnny Newbegin, who is working in a paper mill at Rumford, Maine, and, surprise of surprises, Johnny, whom we always knew as a strong and silent man, is now the toast of the town. Larry Stein, who, incidentally, is again out of a job, reported that George Fowles has announced his engagement to Miss Beth Hennicker. In getting my ticket for Bolivia at the Grace Line Office here in New York, I ran across Bennett Fisher,

who came to Tech after having graduated from Yale in '31, and who was in Course XIII. He is now with the Grace Line, has a desk of his own, and looks prosperous. George Struck, who is still with the Powers X-Ray people, told me that his intended trip to California, for the purpose of making an X-Ray survey of school children throughout that state, folded up in Columbus, Ohio.

All this was written on April 2, four days before I sailed for South America. I have tried to crowd as much last-minute news into this column as I could, and I shall try to continue writing accounts of news that reaches me during the next three years. So I beg all of you to write me once in a while concerning your work, your adventures, your romances, and anything else which will go toward making good copy for this column. As I said in the notes for the May issue, Hoyt Steele is going to help out in bringing before your eyes what is happening in the lives of our classmates, but don't let that deter you from putting an extra two-cent stamp on your letters and mailing them to me.

The following was written in Antofagasta, Chile, on April 23: If ever you want to hear the old cry of "Thirty-four" ring out in a place where only a few of the inhabitants have the slightest idea of what it is all about, then get yourself aboard a ship bound for the Isthmus of Panama, and when you arrive there just let it be known to one of the vast number of Government employees to be found there that you are of the Class of '34 of the M.I.T. It may take a few minutes, but I can assure you that in a very short time you will be greeted by a young fellow (you may not recognize him at first because of his bronzed skin and his healthy appearance) who will call you by name and you will call either Mal (Stevens), Ken (Ryder), Johnny (Carey), Earl (Murphy), Connie (Chase), Jim (Eder), or Ray (Jewett).

I arrived at Cristobal on Friday morning, April 12, and went immediately to the Gatun Locks, where I asked for Johnny and Earl. They were called, and we had a grand old bull session, at which time they told me of the get-together they were holding the following evening, and at which all the boys from the whole Isthmus were to gather. I was sorry to miss it, but my ship, the M.V. *Santa Barbara*, was due to leave Cristobal during the afternoon, reach Balboa at the other end of the Canal by late evening, and sail again as soon as she had completed loading cargo.

Both boys told me where I could reach Jim Eder, and I drove out to the Mount Hope Commissary, where Jim, whom Earl had called on the telephone, was waiting for me. He took me on a personally guided tour of the entire plant, but mainly through the refrigeration and cold-storage plant, in which he is doing most of his work.

I was sorry to leave after such a short visit, but when we were passing through the Gatun Locks along toward mid-afternoon, Earl was there on the walls, shouting to me on the deck that I was to

have a welcoming party waiting at Balboa. We got a lot of things settled in our ship-to-shore conversation, including a date for Earl with a girl on board who was to be in Panama for five days. Perhaps I should explain that the date was for the blow-out on the following evening. We were having tea on board ship at this time, so I got one of the waitresses to wrap up a lot of cake and cookies in a napkin, all of which I threw out to Earl.

We arrived at Balboa very near 11 that night, but just as Earl had promised, the welcoming party was there on the pier and included Mal, Ken, and Connie. A fourth member to the party was a '34 man from Carnegie Tech who, being alone in the Canal Zone, decided that he wanted to make Tech his Alma Mater. His name is Harry Metzler, and he acted so crazily that I first mistook him for one of our gang I had not recognized.

We all adjourned to the Atlas Beer Garden for my stay of a couple of hours in town, where we hashed over all the news that the bunch of us could scrape together (which was plenty). The girl whom Earl had dated was along, and before the fellows had been properly introduced, each of them in turn asked to take her to the brawl the following evening. It all ended by Mal taking her out Sunday, Connie on Monday, and Ken on Tuesday. She was to start back on the *Santa Clara* on Wednesday, so Harry (too bad he was outnumbered three to one) was ordered to take the day off and see that she got safely on the boat.

Those hours flew so quickly that it seemed like minutes before I was back on the deck of the *Santa Barbara*, waving goodbye. But I shall never forget the way they treated me. I felt almost like a traveling envoy of the Class, and I am certain that is only a sample of what every Tech man will do, for "It's always fair weather, when good fellows get together. . . ."

— ROBERT C. BECKER, *General Secretary*, Compania Huanchaca de Bolivia, Pula-cayo, Bolivia, S. A. — HOYT P. STEELE, *Assistant Secretary*, 27 Beechwood Street, Quincy, Mass.

1935

The following have been elected as Course Secretaries: K. J. Winiarski, I; Philip P. Johnston, II; Edward R. Clark, Jr., III; Francis B. Sellew, IV; William L. Abramowitz, V; Vinton K. Ulrich, VI and VI-C; Otto E. Zwanzig, VI-A; Robert Scribner, VII; Richard Jarrell, VIII; Zay B. Curtis, Jr., IX; Thonet C. Dauphiné, X; Darrell A. Root, XI; Richard M. Lewis, XII; Arthur L. Haskins, XIII; Arthur M. Linn, XIV; John B. Ballard, XV; Samuel S. Fox, XVI; Robert J. Granberg, XVII; Elizabeth M. Haskins, XVIII. I would like very much to have these individuals get in touch with me, and would appreciate also hearing from other members of the Class, so that we may start the year off well with interesting notes in the October issue. — ROBERT J. GRANBERG, *General Secretary*, The Quarter Deck, Buzzard's Bay, Mass.

